GEORGIA EMPLOYMENT TRENDS

1947-1960
1965
1970

GEORGIA DEPARTMENT OF LABOR
EMPLOYMENT SECURITY AGENCY

BEN T. HUIET
COMMISSIONER

GEORGIA
EMPLOYMENT TRENDS
1947-1960
1965
1970

AN ANALYSIS OF EMPLOYMENT TRENDS IN GEORGIA
FROM 1947 TO 1960
With Projections of Employment, Population, and Income
to 1965 and 1970

By
John L. Fulmer
School of Industrial Management
Georgia Institute of Technology

October 1961

Georgia Department of Labor
Employment Security Agency

Ben T. Huiet
Commissioner

Contract A-577

Table of Contents

FOREWORD

What is Georgia's status in industrial growth? Is the State faltering and falling behind? To what level of economy can the State's political and business leaders make plans for the next five years, or the next ten years? Consequently, what can we conservatively expect in the way of employment expansion, population growth, increase in personal income, and rise in retail sales by 1970?

In the report which follows, the author, on the basis of a half century of living in the South and as a professor and research scholar in several Southern institutions over more than two decades, tries to assess realistically the past and current forces in economic development as they affect the future growth of the state.

There are no easy or pat formulas by which to forecast the State's future growth for a period of years. This report has employed a combination of statistics, economic analysis, and practical intuition, tempered by some measure of realism, to derive answers for 1965 and 1970, which could prove to be conservative, depending upon developments affecting the conditions assumed constant.

The results, arrived at by a complex analytical procedure, will show Georgia's growth prospects in very favorable light. By 1970 the projections predict a 75 per cent rise in the volume of business over 1960; yet the whole philosophical concept of the report maintains only a reasonably achievable level of economic activity and growth throughout the period of the study.

ACKNOWLEDGEMENTS

The fact that this study represents the fruition of over two decades of research on the South makes it well nigh impossible to catalogue all the reports which have been either sources of information or an unconscious influence upon the author. Those reports most immediately applicable have been recognized by appropriate footnotes. Numerous scholars and professors with whom I have had contact since the early 1930's have conditioned my way of thinking. I have certainly borrowed ideas from many, although over so long a period, it is impossible to be specific. Regretfully, I must therefore acknowledge my debts to them in generalities. However, all those to whom I can point specifically in the immediate past receive my sincere appreciation.

I start with a few of the numerous persons in the Georgia Department of Labor to whom I am indebted for data, critical comments, and helpful suggestions. In this connection, I should like to mention especially the help of Mr. Marion Williamson, Director, Employment Security Agency; Mr. O. H. Stephenson, Chief, Reports and Analysis Section; Mrs. Maria Mallet, Assistant Chief, Reports and Analysis Section; and Mrs. Lillian Lee, U. S. Bureau of Labor Statistics representative in the Georgia Department of Labor.

In this and similar reports I have always found personnel of the Atlanta Regional Office, U. S. Bureau of Labor Statistics, Atlanta, Georgia, greatly helpful and most cooperative. I acknowledge with sincere appreciation the assistance of

Mr. Brunswick Bagdon, Director of the Regional Office, Mr. Charles S. Bullock, Jr., Statistician; Mr. Joseph W. Hines; and Mr. Arthur C. Spinks.

At the Georgia Institute of Technology, I am greatly indebted to Mr. J. B. Cowart, School of Industrial Management, who helped with the statistical calculations; and Mrs. Harriet Seidel, Secretary of the School, who did a very fine typing job from a roughly written hand copy of the manuscript.

My acknowledgements to these friends of research are specific but also perhaps insufficient and incomplete. I, alone, am responsible, of course, for any shortcomings of the report, any undiscovered errors in calculation of trends and projections, mistakes in interpretation, and incorrect or inexact generalizations or conclusions.

HIGHLIGHTS OF THE STUDY

Looking at Georgia in retrospect, 1930 to 1960, at ten year intervals, the state accelerated employment expansion and population growth over each previous decade. Employment expanded at a more rapid rate than population. The result is that migration loss is declining. During 1950-60 Georgia added 197,000 jobs and 499,000 population. The state outpaced all other Southern states except Florida in either direct increase of jobs and people or the decade mean yearly percentage increase of employment and population.

Analysis of the period 1947 to 1960 in detail in order to bring out variations in rate of growth of manufacturing and nonmanufacturing discloses that the upsurge of all types of employment to meet demands of the Korean War resulted in a form of borrowing of growth from the later years of the decade. Excess capacity built up during these few years of war cut the rate of gain in manufacturing in the last five years of the decade to about one-half the rate of gain during the first half of the period. This phenomenon is nationwide. In fact, total employment in manufacturing for the nation has been declining since 1953. This is also true of some of the most heavily industrialized states.

The decline in rate of expansion in Georgia's manufacturing employment during the last half of the 1950's is indirectly explained by the shift in industrial mix and directly by shifts in war demand reinforced by automation and technological changes. Because declines of three important manufacturing industries in Georgia (textiles, lumber and wood products, and transportation equipment) offset a part of

the growth of nine other industrial groups after 1953, the yearly growth rate of manufacturing employment in Georgia was reduced from 3.83 per cent yearly to 1.77 per cent. This is a very significant generalization. It helps to explain why Georgia's growth rates in manufacturing could not be maintained at the rate of growth from 1947 to 1953, a period which included the Korean War. It is not due to lesser promotional efforts on the part of the State of Georgia, which have in fact been enlarged during most of the period since 1953, but to: (1) basic shifts from war demand, and (2) to internal shifts within the manufacturing industry.

The fastest growing manufacturing industries are apparel, metal fabricating, paper and allied products, and miscellaneous. The employment expansion of these four categories varied from 4.45 per cent to 5.72 per cent during the period.

A second category of manufacturing industries with yearly growth rates of 2.95 per cent to 3.51 per cent, are food and kindred products; printing and publishing; and stone, clay and glass products. This category of manufacturing industries accounted for about 25 per cent of Georgia's manufacturing employment in 1960.

The last and slowest growing manufacturing industries are chemicals and allied products, and furniture and fixtures, with yearly percentage increases of 1.26 to 1.84 per cent.

All nonmanufacturing employment accounts for approximately two-thirds of total nonagricultural employment in Georgia. Seven major categories are represented in this classification. They are mining; construction; finance, insurance, and real estate;

government; services; trade; and transportation, communication, electric, gas and sanitary services. The fastest growing are finance, insurance, and real estate; and government. During the period 1948 to 1960 the aggregate rate of employment growth was 17,400 jobs yearly.

The second most rapidly growing nonmanufacturing industries are trade, services, construction, and mining. The most slowly growing category in all of the comparisons are transportation, communication, electric, gas and sanitary services. It is not surprising that this is so in view of the high rate of expenditures for research and development generally found in these industries.

The trend analysis to this point shows in a nutshell that during 1948 to 1960 nonmanufacturing industries expanded employment at the yearly rate of 2.95 per cent, which compares to a composite yearly rate of 1.77 per cent for manufacturing employment. These data on growth rates mean that the yearly rate of increase in employment in nonmanufacturing was 2.2 times population increase during the period and 1.7 times the rate of expansion in manufacturing employment. These are dramatic shifts and go a long way toward explaining the striking improvement in the income level of the state both absolutely and relatively during the period.

Forecasts of employment to 1965 and 1970 are based on the assumptions that: (1) there will be no radical change in the international situation, (2) the Employment Act of 1946 will continue to be the policy of Congress and the American people, and heavy unemployment for an extended period will be prevented, (3) the trend downward in migration loss will accelerate, and (4) the cultural level and self-improvement

interests of the people of Georgia will continue to advance.

The summary of significant forecasts of Georgia's economy to 1965 and 1970 follows:

1. Employment in Georgia is expected to increase by 90,300 jobs in the five year period 1960-65. The increase from 1965 to 1970 is forecasted as 173,600 jobs.
2. The corresponding population growth is 248,000 from 1960 to 1965; and 455,000 in the five year period ending in 1970. Total population in 1965 is estimated at 4,203,000 and in 1970 at 4,658,000. Migration loss will be held to about 10 per cent.
3. Based on relationships to U. S. per capita income, Georgia per capita income is expected to rise from $1,622 in 1960 to $1,954 in 1965, and to $2,371 in 1970 (all figures in current dollars).
4. Considering that population is estimated at 4,203,000 in 1965 and 4,658,000 in 1970, total personal income (in current dollars) is placed at 8.2 billion dollars for 1965 and 11.0 billion dollars for 1970. The corresponding retail sales will be 5.3 billion dollars and 7.1 billion dollars.

The most serious problems which may handicap the Georgia economy in the 1960's are: (1) scarcity of skilled workers, (2) inadequacy of the highway system, and (3) lack of centralized state planning and development. Nowhere, and especially in Georgia and the South, are concepts and methods of training of skilled workers keeping pace with demand. An easily accessible transportation system, with special

emphasis on highways, is imperative in order to keep Georgia's (and each locality's) industries in touch with sources of raw materials and in reach of the nation's and the world's markets, at lowest competitive transport costs. Centralized planning and development is necessary if the wastes of duplication are to be eliminated. Long range planning of state investments can be a highly effective technique by which to develop all parts of the state's economy.

I. Introduction

There is some confusion and misunderstanding in the public mind about Georgia's economic growth - past, present, and future -; and more particularly its expansion in manufacturing employment. What is the status of manufacturing employment in Georgia, and what are its future prospects? Is a slow rate of growth for a comparatively short period necessarily bad? Obviously not if it sets the stage for more rapid expansion in the future.

The objectives of this analysis are to:

1. Ascertain the relationship of employment of total manufacturing in Georgia to manufacturing employment of nearby states and selected states throughout the nation.
2. Calculate rates of growth of significant employment categories, for both manufacturing and nonmanufacturing.
3. Determine why some manufacturing types are declining, others expanding rapidly.
4. Analyze the significance of the interrelationship between lumber and wood products manufacturing, and paper and allied products.
5. On the basis of the analysis of trends and prospects for growth of detailed types of employment, project the State's economy for 1965 and for 1970 in terms of employment, population, income, and retail sales.

The analysis will be confined primarily to the period 1947 to 1960. This is a reasonably homogeneous period from the standpoint of development forces. The main

disturbing factors have been the Korean War and four business cycle swings, i.e., 1948-49, 1953-54, 1957-58, and 1960-61. The 1960-61 recession began in the third quarter of 1960, resulting in declines of Gross National Product, employment, investment, retail sales, and related measures of the level of the general economy; recovery began in the second quarter of 1961.

On the other hand the beginning years, 1947 to 1948, were boom years in response to the unsatiated demand accumulated from World War II. Shortly thereafter, the Korean War occurred and produced some of the usual stresses and strains of a war economy, particularly as regards the inflated demands on the primary metals and other durable goods industries for weapons of war. Consequently, the early years of the period selected, 1947-53, are abnormally high compared to what is to be expected from a typical peacetime economy. The comparatively high level economies during the first half of the period had the effect of reducing the growth rates below what they would have been had a war situation not inflated manufacturing capacity. It is obvious, therefore, that comparisons between rates of growth in the period 1950-53 and rates of growth during 1954-60 are misleading. Capacity installed during 1950-53 for a war time economy had to wait until the normal growth in a civilian type economy could catch up with the capacity installed as a result of the Korean War. Once this slack in capacity is absorbed by growth in the civilian economy, a more rapid rate of growth, in line with expansion in the size of the market as measured by total population and total personal income, may be anticipated.

The methods of analysis in main outline form involved: (1) a general look at

Georgia in retrospect, 1930 to 1960, (2) analysis of rates of expansion of manufacturing in Georgia compared to adjacent and nearby Southern States, also with other selected industrial states in the nation, (3) structural analysis of shifts in employment rates of growth inside the Georgia economy, proceeding by calculation of rates of growth for major growth classes of manufacturing and nonmanufacturing, (4) projection of employment changes in eighteen groups of manufacturing and nonmanufacturing employment for 1965 to 1970, and (5) projections of measures of general growth in the Georgia economy, such as total employment, population, personal income, and retail sales for 1965 and 1970.

Several assumptions govern the projections. First, it is assumed that there will be no war of major proportions; however, the cold war is assumed to continue more or less unabated during the next ten years. Second, the Employment Act of 1946 will continue to be the policy of Congress in preventing a depression of serious proportions. Third, the people of the nation and Georgia will retain a high interest in cultural and personal advancement. Widespread interest in education, health research, and also research in technological development and the advancement of science will accelerate. Fourth, past trends towards lower percentage of natural increase lost by migration will be accelerated.

While the trend analysis employed a type of mathematical curve[1/] which most

1/ The equation: Log Y = Log a + X log b, a form of compound growth curve, was fitted to all sets of data. For convenience in the calculations, the 13 year period (an odd number of years) was employed.

satisfactorily fitted the period selected[2/], projections were not derived by a simple mechanical extrapolation of rates of growth from the period 1948 to 1960 (or other period). The method employed the mechanically determined trend as a base line from which adjustments were made by analysis to reflect shifts in the basic development forces, such as shifts in market demand, technological change, and trends in the employment composition of the economy.

2/ Statisticians set three criteria for trend analysis of a time series. They are: (1) a period as long as possible, (2) a series of years free of greatly abnormal economic conditions, and (3) begin the analysis and end it in the same stage of the business cycle. Both 1948 and 1960 meet the last condition. Because of the Korean War, the years 1950 to 1953 should be omitted. This, however, violates the first criterion. The period for analysis, therefore, has many deficiencies which must be taken into account by the interpretations. For further discussion on calculations of trend lines for a time series, see Neiswanger, William A., Elementary Statistical Methods, The MacMillan Company, 1954, pp. 516-20.

II. Georgia in Retrospect, 1930 to 1960

A review of Georgia's growth over the longer 30-year period since 1930 reveals a significant stepping up in both rate of increase and total employment expansion. The following tabulation[3/] shows this very clearly:

Decade	Population Growth		Employment Increase	
	Total in Decade	Decade Mean Yearly Per Cent	Total in Decade	Decade Mean Yearly Per Cent
1930-40	215,000	0.70	27,000	0.25
1940-50	321,000	1.01	82,000	0.71
1950-60	499,000	1.36	197,000	1.54

The data show that both population and employment increases are accelerating; but employment gains were relatively greater in the last decade only. During the decade 1950-60, two jobs were provided for each five persons of the general population, whereas during 1940-50 only one job was created for each four persons. The improving job situation in Georgia is shown by what has been happening to out-migration. In the 1930-40 decade Georgia lost 50 per cent of its natural increase to out-migration; in 1940-50 the ratio was scarcely lower at 48 per cent; whereas during 1950-60 it was

3/ Fulmer, John L., "Trends in population and Employment in the South Since 1930 and Their Economic Significance," prepared for the Inter-University Committee for Research on the South, St. Petersburg, Florida, October 28, 1960, pp. 5, 19, and 55-56.

down to 30 per cent, and the loss from the state in actual numbers was 214,000 migrants.[4/]

Population and employment comparisons with adjacent states show that Georgia's population and employment for the decade 1950-60 compared quite favorably with all states in the immediate Southeast, and was outstripped only by Florida. This state has long been a great attraction for tourists and the retired. More recently defense type industries and related activities have been moving to Florida, which is the nation's largest importer of people next to California. Comparisons of population and employment changes for the decade 1950-60 between Georgia and selected adjacent Southern States are given in the tabulation below:[5/]

State	Population Increase		Employment Expansion	
	Total in Decade	Decade Mean Yearly Per Cent	Total in Decade	Decade Mean Yearly Per Cent
GEORGIA	499,000	1.36	197,000	1.54
Alabama	205,000	0.65	87,000	0.90
Florida	2,180,000	5.94	664,000	5.35
North Carolina	494,000	1.16	191,000	1.19
South Carolina	266,000	1.18	89,000	1.13
Tennessee	275,000	0.81	65,000	1.03

It is significant that most of the states listed in the table had somewhat

4/ Current Population Reports: Population Estimates, Bureau of the Census, Series P-25, No. 227, April 26, 1961, p. 3.

5/ Fulmer, ibid., pp. 24-30.

higher yearly percentage rates of increase in employment than population. The relatively larger increase in number of jobs indicates a decline in population pressure and a corresponding rise in standard of living.

The stepped up rate of employment expansion in the states listed is due to changes in the employment mix and to urbanization. The first involves the shift to a more efficient agriculture, and displacement of farm workers by nonagricultural jobs which rapid growth elsewhere in the economy has been able to absorb. Urbanization includes also large city agglomerates which contain the powerful generative economic forces in the State's economy. In terms of the Georgia situation, both points help to explain development trends in the past, and underscore the potentials for economic development in the future.

The loss of jobs from agriculture is estimated at 16,000 annually during 1940-50; and 9,000 yearly from 1950 to 1960. Since the agricultural revolution has been in progress for several decades, it has undoubtedly exhausted much of its force. While there is no end in sight for further gains in productivity or of mechanization, the number of workers displaced by the growing efficiency of production operations in agriculture will undoubtedly be considerably lower than during 1950-60. The amount of the reduction below the 9,000 yearly rate cannot be closely estimated. However, even if it is as much as a reduction of 5,000 jobs yearly from agriculture, the number of jobs which will need to be developed in the nonagricultural sector of the State's economy to offset the loss in agriculture is seen to be significantly lower. In other words, much less of Georgia's natural growth strength in the 1960's will be required to overcome a

shrinking force which has been significantly stronger in the past. Its growth strength will obviously be less submerged and will show forth more strongly and boldly than at any time in the recent past.

Second, Georgia now is favored by a city of more than 1,000,000 population, which extends its economic strength and generative capacities far beyond the borders of Georgia. This gives the state the greatest concentration of business leadership and financial power in its history. Increasing size of cities provides an ever widening range of opportunities for talented persons. Their migration to the larger population centers enlarges the demand for housing and house furnishings. This produces a mulitplier effect on other sectors of the local and state economies which will not be minor because Atlanta is expected to grow to about 1.3 to 1.4 million population by 1970. Many other cities which derive some of their economic strength from Atlanta and in turn contribute to Atlanta's business volume, will tend to grow along with the dominant city, although not necessarily proportionately.

The long view of Georgia's economy is clearly reflected by comparisons of decade rates of change; however, this method tends to obscure many important trends and changes which are of shorter duration than ten years. In the decade just closed, we have experienced a war, two complete business cycles and the beginning of a third, a few nationwide strikes in important industries, and a new emphasis on automation and automatic controls in manufacturing operations. Important industries in Georgia were stimulated by the defense requirements of the Korean War. Inflated demands from a wartime economy develop capacities to produce which remain to plague a

civilian economy. Large displacement of workers in a nationwide industry, like the automobile industry, creates impacts on the number of jobs available or that might be lost to a state's economy. With these conditions in mind, we move to an intensive analysis of Georgia's economy during the period 1947-60 in order to learn the nature of the forces at work, the shifts between industries and developments of new industries or shifts in market demand. Since data of a complete and comprehensive nature are available only for employment for a representative number of years in the past, the analysis is of necessity confined to employment trends.

III. Comparisons of Manufacturing Growth Trends of Georgia with Specified States, 1947 to 1960

In Chart I are plotted to logarithmic scale total manufacturing employment[6/] of Georgia and comparable Southeastern States. (Florida is given in the comparisons presented in Chart 2).

Cursory examination of the Chart fails to indicate any startling differences between states in rates of growth, taking the entire 14-year period in one general sweep. Mississippi is an exception to this generalization. It has the steepest line and therefore the largest rate of growth of any of the states shown in the Chart. No great significance, however, should be attached to this difference because manufacturing employment in Mississippi begins at a low base point compared to the other states. Total manufacturing employment of 90,000 in 1947 is from one-fourth to one-half as large as the other states included in the Chart.

Another contrasting difference is Alabama's rate which was such that the state lost ground relative to the other states. Alabama's manufacturing is heavily concentrated in steel making and durable goods. Note also that the three swings of the business cycle are clearly shown in all states. A two-year comparison employing 1947 against 1954 to compute rates of growth would involve comparing a boom year (1947) with a recession year (1954). If the comparison is shifted to

---

6/ The data are the Bureau of Labor Statistics series. They have been provided through the Atlanta regional office of the U. S. Bureau of Labor Statistics and the Georgia Department of Labor, Employment Security Agency, Reports and Analysis Section.

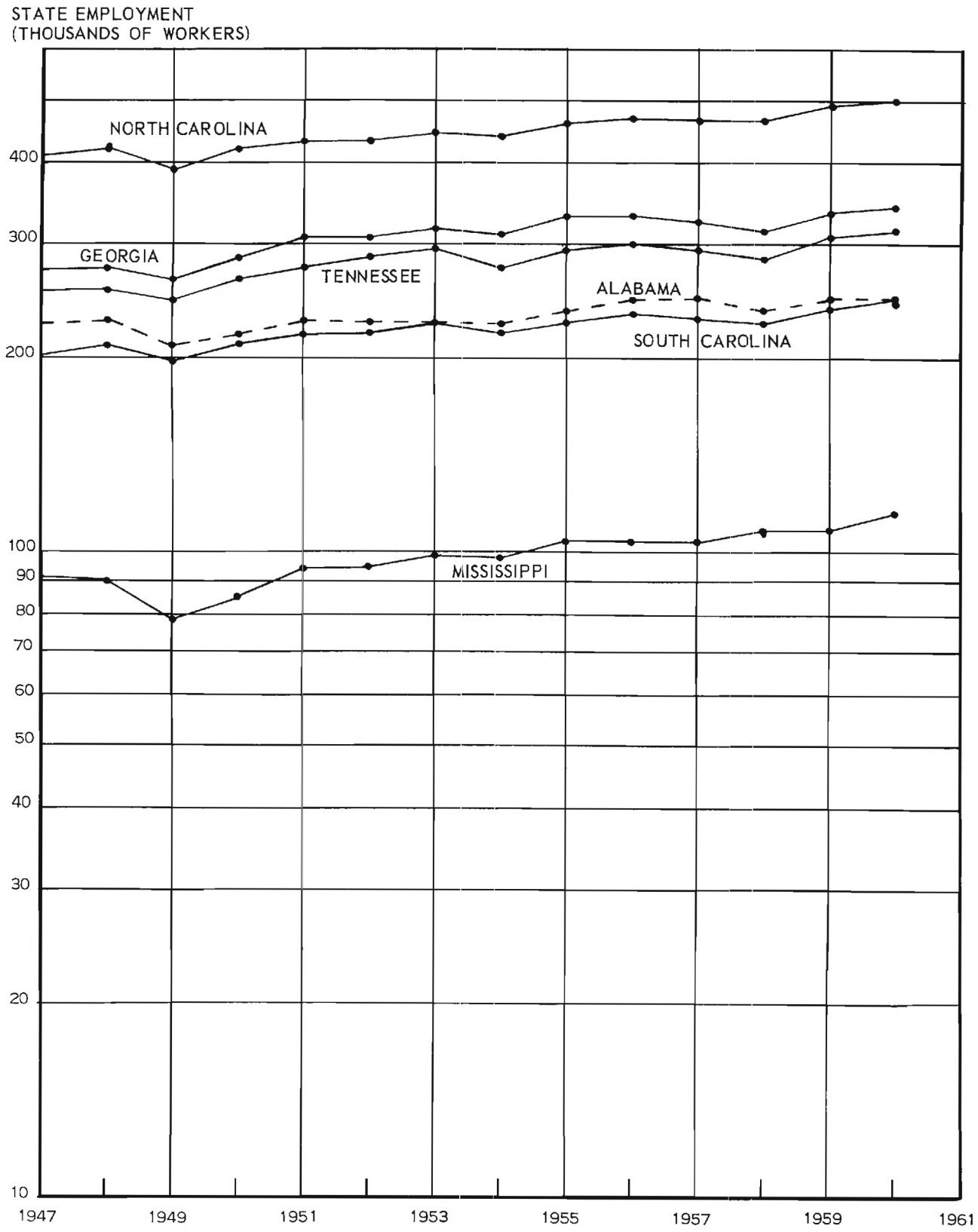
1954 against 1958, two depression years are involved but incomparabilities remain because employment in the different states are not constituted of the same components of manufacturing and therefore will respond differently to a business recession. Note that Georgia, Alabama, and Tennessee were affected more severely by the 1958 recession than North Carolina and South Carolina. Mississippi had an expansion of employment during 1958.

The main reason the employment of states responds differently to the business cycle is because of state differences in industrial mix or composition. Some states like Alabama, and to a much lesser extent Georgia, are heavily concentrated in manufacture of durable goods which respond more sharply to a business recession than states heavily concentrated in nondurables, as South Carolina.

In comparisons of growth rates it is preferable to consider the whole period by calculating a mathematical curve to the period 1948 to 1960. As explained previously this period meets the three criteria suggested by statisticians, with the possible exception of the Korean War period 1950-53, but particularly 1951. The results of this analysis are summarized in Table 1, and the major results are tabulated below:

State	Yearly rate of Growth for Period 1948 to 1960	
	Per Cent	Number of Jobs
GEORGIA	1.77	5,600
Alabama	0.86	2,000
South Carolina	1.30	2,900
Tennessee	1.93	5,400
North Carolina	1.78	8,000
Mississippi	3.12	3,100

CHART 1
TRENDS IN MANUFACTURING EMPLOYMENT IN GEORGIA COMPARED TO SPECIFIED SOUTHERN STATES, 1947 TO 1960



It is seen that the percentage rate for Georgia is a median relative to the other states. Mississippi has a percentage rate that is substantially higher than Georgia's. Tennessee is about one tenth percentage point higher. North Carolina is one hundredth of a percentage point above Georgia's 1948 to 1960 growth rate. The other states included in the comparison had a significantly lower rate than Georgia's rate. In terms of the number of jobs added yearly only North Carolina had a larger number than Georgia. This is explained by the fact that the manufacturing base in Georgia is only 60 per cent as large as North Carolina's.

Study of all the trend lines in Chart I indicates that biggest increases in manufacturing employment of all states occurred during the Korean War. Since that period and particularly since 1953, the pace of growth has been much less for all states. Unfortunately, 1954 to 1960 is too short a period to do effective trend projections. However, the strength of this force was tested for Georgia with the nine year, 1952-60 period. The result is a yearly rate of percentage increase of 0.90 per cent, or 2,900 jobs yearly[7/]. This slackening off in rate of growth is not peculiar to Georgia. In fact as shown in Chart 2 some important industrial states have suffered an absolute decline in manufacturing employment since 1953.

7/ This is a conclusion from studying the aggregate. When the total figures for manufacturing are broken down to two-digit industries, it is found that many types of manufacturing in Georgia had a strong growth throughout the period. The results are obscured, however, by other industries which are shrinking. This reflects the industry mix problem.

CHART 2
TRENDS IN MANUFACTURING EMPLOYMENT IN GEORGIA
COMPARED TO SPECIFIED STATES AND THE NATIONAL TOTAL
1947 TO 1960

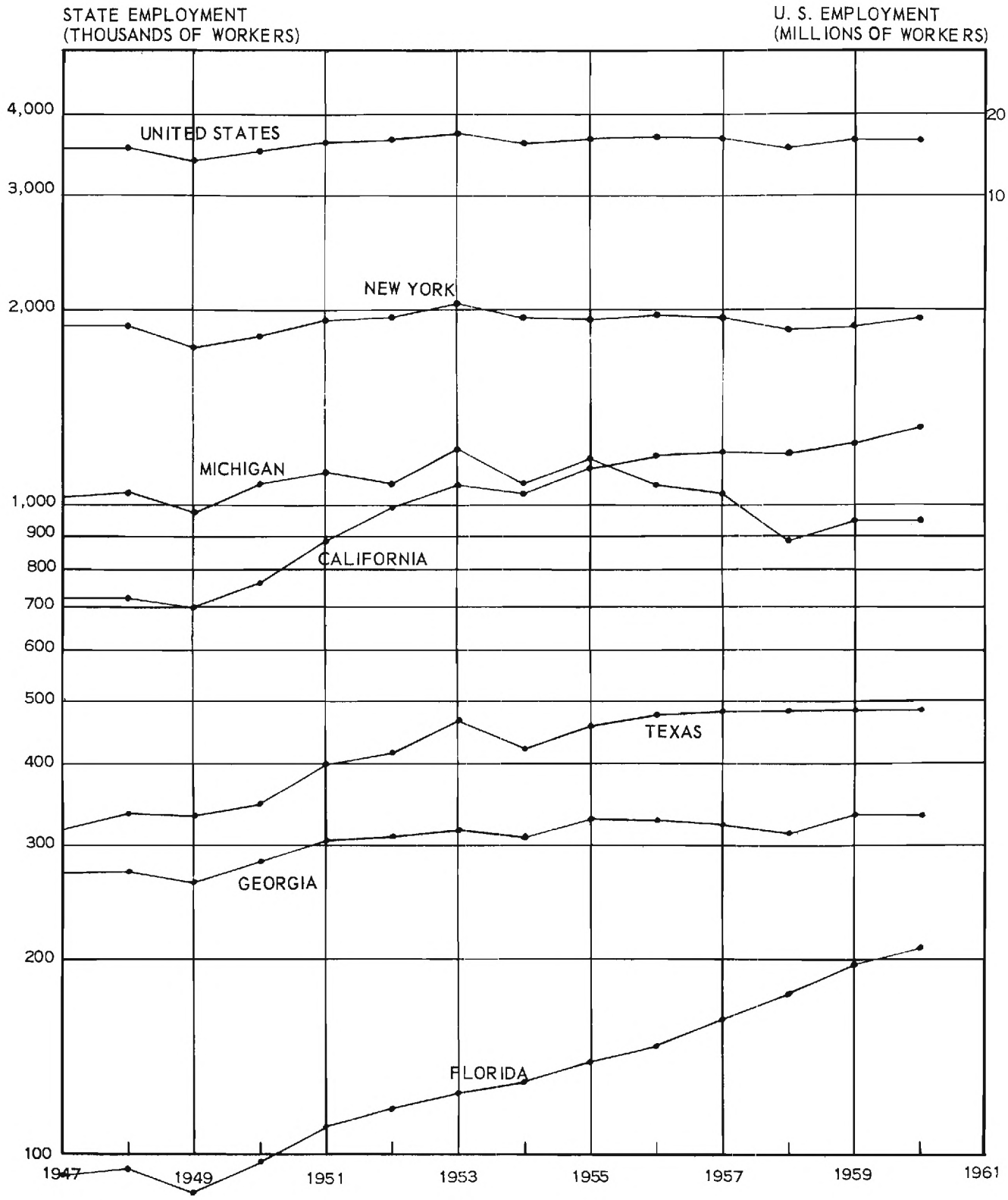


Chart 2 gives comparisons between Georgia manufacturing employment and that of selected, important manufacturing states[8/]. National figures as well as data for Florida are also given. The logarithmic trend lines show a decline for the giant industrial states of New York and Michigan since 1953. National figures have the same decline. This trend in the two mature industrial states is true of much of industrial America. The Korean War inflated capacity everywhere although with varying degrees of intensity, and apparently the American economy as a whole has not fully used up the slack in capacity. This problem, however, has been reinforced by automation which displaces workers at the same time that industrial capacity is enhanced.

California, Texas, and Florida are also given in the comparison with Georgia. All three have substantially stronger growth trends in manufacturing than does Georgia. It is not possible to run down the reasons completely except that Florida and California are attracting the newer types of industries. Texas is rich in petroleum and other resources for a complex manufacturing economy. But even more important than any of these factors is the phenomenal growth of the market, as shown by population growth. None of the rapidly growing states have a high manufacturing employment ratio to total nonagri-

8/ California was selected because it had the highest absolute population increase. Michigan was selected because it is the leading state in manufacture of automobiles, which industry has always been prominent in automated methods. New York was included because the state has the nation's largest employment and also because New York falls at the Eastern end of the great industrial belt. Trends for Texas are interesting for two reasons: rapid growth in manufacturing and because it lies at the Western end of the South.

cultural employment. The tendency to "catch-up" with the rest of the United States in the relative amount of manufacturing employment is of great importance in explaining the more rapid growth of these states.

The theory of the effects of market increase (population) and relative size of the manufacturing employment ratio is illustrated by comparative relationships for these states for the period 1950-60.

State	1950-60 Increase in-				Ratio of Manufacturing to Total Employment
	Manufacturing		Population		
	Number of Jobs (000 omitted)	Per Cent	Number (In Mil.)	Per Cent	
GEORGIA	53	19	0.5	15	36
California	569	75	5.0	47	28
Florida	107	111	2.1	77	15
Texas	136	38	1.8	23	20
United States	1,370	9	26.4	18	33

The data indicate that the states making the biggest percentage increase in manufacturing employment had the largest percentage increase in population, and were low in the ratio of manufacturing to nonagricultural employment compared to the nation. The latter is the "catching up effect."

A comprehensive summary of the trend analysis is presented in Table 1. The most significant results from the trend analysis for Georgia and adjacent states were discussed in connection with Chart 1. Similar results for Georgia and more distant states are presented in an analysis of Chart 2. It is important

Table 1

Comparison of Growth Rates in Manufacturing Employment of Georgia, Neighboring States, and Selected States at Other Locations in Nation 1948 to 1960

State	Period	Yearly Rate of Growth During Period Specified	
		Per Cent [a/]	Number of Jobs
GEORGIA	1948-60	1.77	5,600
	1952-60	0.90	2,900
Adjacent states:			
Alabama	1948-60	0.86	2,000
Florida	1948-60	7.25	9,600
South Carolina	1948-60	1.30	2,900
Tennessee	1948-60	1.93	5,400
Other Selected Southern States:			
Mississippi	1948-60	3.12	3,100
North Carolina	1948-60	1.78	8,000
Texas	1948-60	3.39	14,400
Selected States in Other Locations of U. S.:			
Michigan	1947-53	2.44	26,400
	1954-60	-3.33	-33,800
California	1948-60	5.52	56,300
New York	1947-53	1.24	23,500
	1954-60	-0.20	- 3,100
United States	1947-53	2.22	346,500
	1954-60	-0.25	-40,800

a/ The growth rates are compounded annually and were derived by solving the following equation:

$$\text{Log } Y = \text{Log } a + X \text{ Log } b$$

Note: For most states the period 1948-60 is employed in lieu of 1947-60 mainly for convenience in calculations.

to emphasize again the fact that in the national economy, Michigan, and similar states show a job loss in manufacturing since 1953. The yearly rate of decrease for the period is 33,800 jobs annually for Michigan, 3,100 for New York, and 40,800 for the United States.

A study of the Michigan economy by Professor Haber and others[9/] attributed the decline to loss of defense contracts from the end of the Korean War, but more permanently from the shift in character of the weapons of war, as an outgrowth of the cold war. They ascribe part of the decline to decentralization of the automobile industry, and estimate the decline in number of Michigan jobs from automobile manufacture at over 200,000 or from 503,000 jobs in 1953 to 293,000 jobs in 1958. They also point out that heavy investments in plant and equipment were made by the automobile industry, presumably to incorporate all possible cost saving and efficiency devices available. This has reduced the number of workers relative to output in the automobile industry nationwide, as shown by data from the Bureau of Labor Statistics[10/]. These data show that employment in the automobile industry declined from an average of 698,000 workers during 1951-55 to an average of 579,000 during the next five years. The big break probably began shortly after the boom years for automobiles in 1955 and 1956 when average annual employment was likewise 698,000, declining to 525,000 in 1958 to 1960. This is a dramatic reduction and has followed in part from the large investments in

---

9/ Haber, William, and Others, The Michigan Economy: Its Potential and Its Problems, The W. E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 1959, pp. 16-20.

10/ Reported in Business Statistics, 1959, Biennial Edition, U. S. Department of Commerce, page 64; also from the February issue of the Survey of Current Business, 1960 and 1961, page 12.

equipment which have occurred in the industry during the last 6 or 8 years.

The conclusion is that Georgia and adjacent states have been able to continue expansion of manufacturing, although at a somewhat less rapid rate, in the face of opposite national trends. Georgia and its neighboring states have obviously experienced adjustments from capacity built up for the Korean War, although not as much as the more heavily industralized states in the nation because the Southern States are less concentrated in durable goods manufacture. Greatly stepped-up activity in automation and application of the latest technological advances have apparently not weighed as heavily against the South as the rest of the nation because of the durable goods factor again. In fact, this trend has undoubtedly favored location of branch factories in the South. Construction of a new plant in this area would have fewer encumbrances to incorporating the latest building design features and installing the newest and most appropriate equipment and devices which become an inherent part of the entire factory.

Georgia manufacturing and nonmanufacturing employment have growth problems which are peculiar to the State. There is the textile industry, long the backbone of Georgia's manufacturing, which in the face of foreign competition, entry of high wage industries into the state's economy, automation and technological problems peculiar to textiles, has been shrinking in number of workers, although output has continued to expand. Forest resources, a basic industrial raw material, have two major industries competing for a total supply of wood and timber resources which have growth rates that may be less than the rate of utilization.

The internal shifts which are occurring throughout Georgia's economy tell a new story from the one given above. Such an analysis is also necessary in order to get an analytical base for projecting manufacturing employment for the next five and ten years.

In the analysis which follows with more specific Georgia industries, the basic procedure involved three steps. First, a trend line, assuming a logarithmic function, was fitted to the most logical period. Second, the trend line was extrapolated to 1965 and 1970. Third, the extended trend line was adjusted for technological changes, competitive factors, and the impact of expected national trends. For instance the number of young people entering the labor force in the United States will rise sharply to a new level in 1965. This will result from the large postwar births maturing into 18 year olds. In 1960 the number of persons becoming 18 years old each year was about 2.6 million. This number will rise to 2.8 million in 1962 or 1963 and remain around this level until 1965, when the number will rise to 3.8 million, an increase of 35 per cent. The number of youths becoming 18 years old each year will drop in a couple years back only to 3.6 million, the rate of entry remaining at this level until 1970. The greatly larger number of 18 year olds after 1965 will obviously have important impacts on the American economy. First, they will increase pressures on the demand for jobs and for education. The U. S. Department of Labor[11/] predicts that the labor force will rise 5.7 million from 1960 to 1965 and by an additional 7.8 million from 1965 to 1970. Second, new demands for housing, durable goods, recreation, and services will

11/ Manpower, Challenge of the 1960's. U. S. Department of Labor, 1960, pp. 4-5.

accompany this sudden change in the labor force [12/]. Although we do not have similar figures for Georgia, changes in the labor force should roughly parallel those spelled out for the United States. Therefore, our projections for Georgia reflect the upsurge in number of new workers beginning about 1965. For the most part we assumed for the projections that rates of growth from roughly 1952 to 1960 would apply to 1965. The projections for 1965 to 1970 represent an acceleration in rates of growth to reflect the upsurge. However, this method of adjustment is applied only to those employment categories likely to be affected.

12/ It is assumed that the Employment Act of 1946 and other measures of Congress will prevent a recession of major scope.

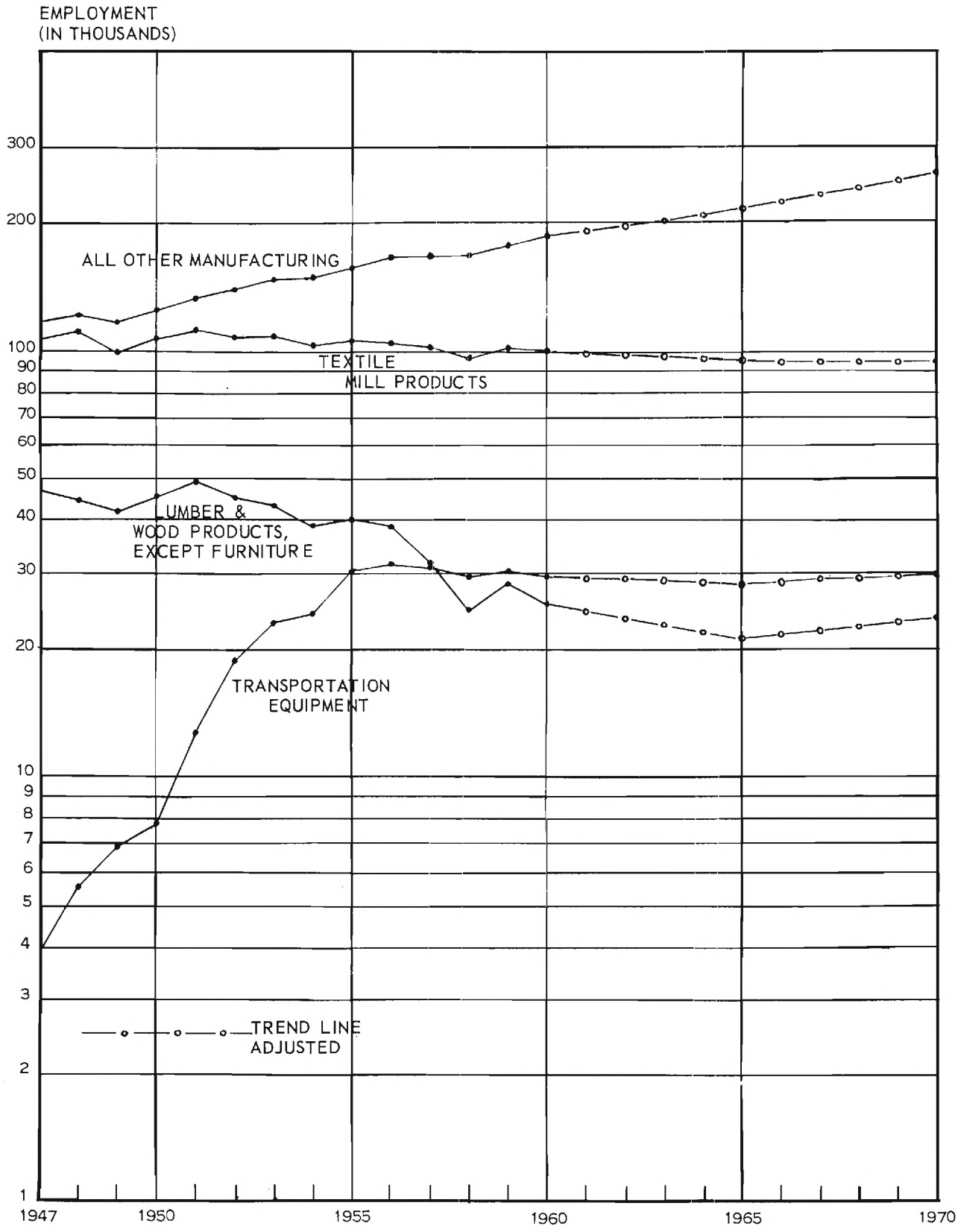
IV. Trends and Development Prospects for Major Categories of Manufacturing Employment

The Industrial-Mix Problem

Chart 3 divides Georgia manufacturing employment into four categories. They are textile mill products, lumber and wood products, except furniture, transportation equipment, and all other manufacturing. This classification contains the three 2-digit categories which are declining industries. "All other Manufacturing" combines eight 2-digit manufacturing groups and a miscellaneous or "catch-all" category [13/] which showed various rates of growth during the period. Textile mill products declined throughout the period although there were brief periods of recovery. The industry is below the average wage in an economy that is moving towards high wage industries which may cause some part of the textile industry to shift to Southern States further West. There are also problems of foreign competition and technological innovations which are affecting its growth rate in Georgia. Lumber and wood products manufacturing, dependent on a basic raw material in Georgia, have experienced some tendencies toward integrated, large mills, with logs hauled to a central place for milling. Industry sources point out, however, that a bigger factor is reduced demand because of adequate supplies of higher quality West Coast lumber products. Competition from pulp mills is preventing timber stock from growing to larger size trees, required for quality products.

13/ Includes a wide range of products, as for example:
Leather and leather products; ordnance; professional, scientific and controlling instruments; tobacco manufacture; petroleum refining and related industries; rubber and miscellaneous products; and a variety of other miscellaneous manufactures of durable and nondurable goods.

CHART 3
COMPARISON OF EMPLOYMENT IN THREE DECLINING MANUFACTURING INDUSTRIES WITH "ALL OTHER" MANUFACTURING IN GEORGIA 1947 TO 1960, WITH PROJECTIONS TO 1965 AND 1970



The third category, transportation equipment, includes mainly the large aircraft factory near Marietta, and automobile assembly plants of the Atlanta area. In response to the Korean War need for aircraft and heavy demand for civilian use of automobiles, this industry category reached a peak in 1956; but from 1956 to 1960, it lost 6,000 workers. This reversal of an important industry in the State in so short a time is due to shift in types of weapons for war and to the changes in the automobile industry mentioned previously. Although the composite of "all other manufacturing" had an almost uniform growth throughout the period of 5,700 jobs yearly, its yearly rate of 3.83 per cent, very good indeed, was offset in part by the three major declining industries. The result for all manufacturing was a growth rate of 1.77 per cent yearly. Without these internal adjustments, made necessary of course by the nature of the industries involved, Georgia's growth in manufacturing employment of 3.83 per cent yearly would have been among the top states, and above Texas' 3.39 per cent by nearly one-half per cent.

In the projections it is noted that the three declining industries are assumed to make some recovery from 1965 to 1970, in response to the considerable upsurge in market demand expected at that time. Other manufacturing is projected by extending the growth rates from 1954 to 1960 to 1965 after which an upsurge is also introduced.

The Fastest Growing Manufacturing Industries

Four very encouraging 2-digit manufacturing industries are presented in Chart 4. They are apparel and other finished textile products; metals - primary, fabricated, and machinery manufacture; paper and allied products; and miscellaneous - leather and leather products and all other industries[14/]. It is of tremendous interest to find growth industries with an annual increase of approximately 5 per cent yearly, actually ranging from 4.45 per cent to 5.72 per cent. The yearly rates of growth of these industries from 1948 to 1960 were as follows:

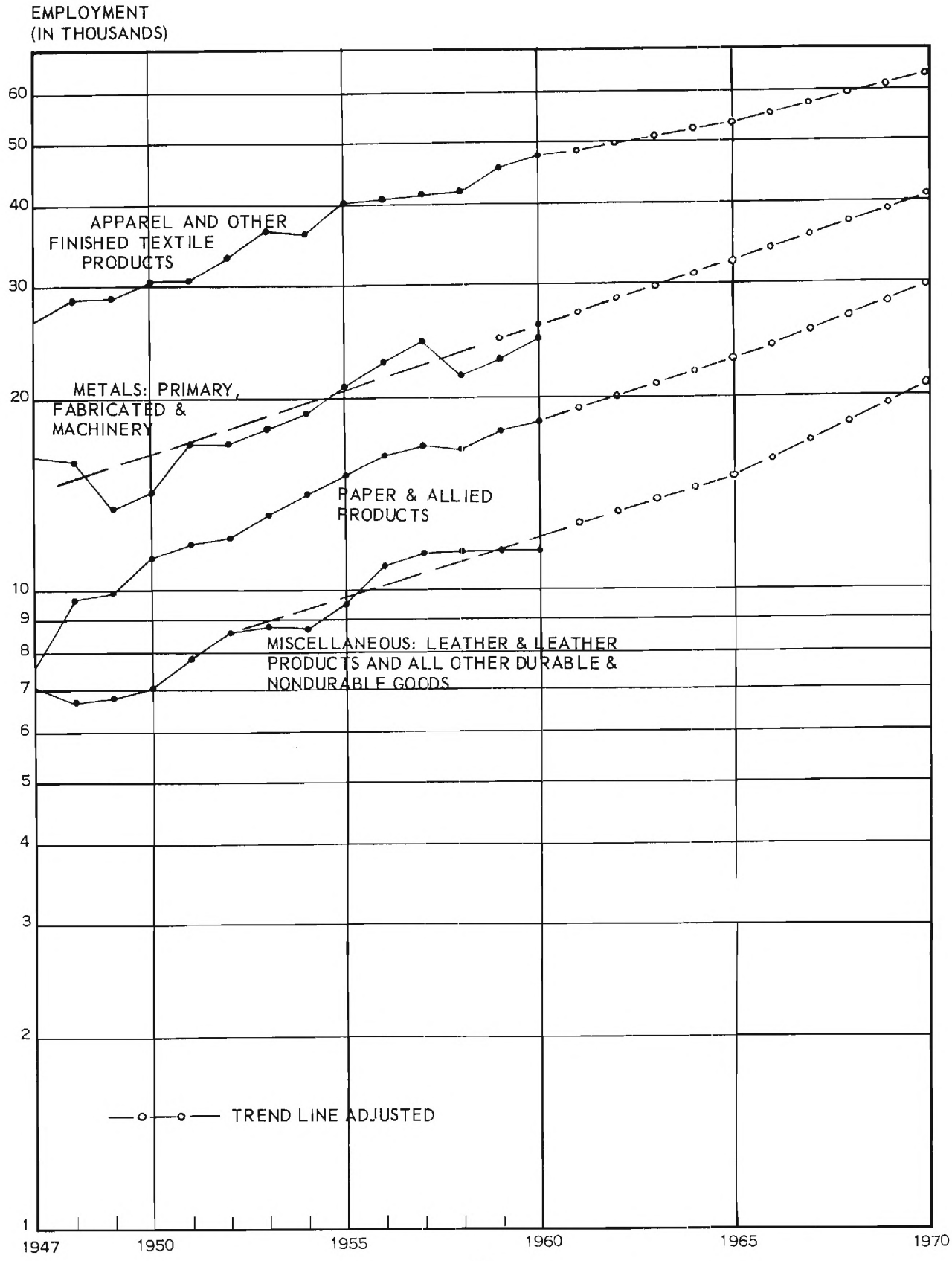
	Yearly increase	
	per cent	number of jobs
Apparel	4.45	1,600
Metals	4.95	900
Paper and products	5.72	800
Miscellaneous	4.68	500

It is noted that total yearly expansion of jobs in the four industries equalled 3,800, or about 67 per cent of all industry.

In looking ahead to the prospects for these industries, a number of conditioning factors must be recognized. Apparel and other finished textile products is by and large highly mobile and dependent on low wage, female workers. The

14/ The complete definition of this miscellaneous class has been given above, see footnote 13.

CHART 4
TRENDS IN EMPLOYMENT IN FOUR OF THE FASTEST GROWING MANUFACTURING INDUSTRIES IN GEORGIA, 1947 TO 1960 WITH PROJECTIONS TO 1965 AND 1970



steady, highly energetic, low wage, female workers[15/] have been found generally in the small towns of Georgia and other Southern States. The apparel plants have drawn heavily also on female workers off nearby farms. Therefore, in projecting the future of this industry for the period, two conditions may be limiting. First is the more general dominance of higher wage industries in the future. Second, continuation of shrinkage of the farm population will greatly restrict, in the more distant future perhaps, the supply of the most sought after types of female labor for apparel factories. The trend line extension, therefore, is at a somewhat less rapid rate than occurred between 1948 and 1960.

Metals and products as shown face no restrictions. All factors favor continued rapid development of this industry. Because of high labor costs relative to value of output, metal products are becoming increasingly market oriented. They will therefore gain strength for expansion from accelerated trends toward larger urban centers in Georgia in the future.

Paper and allied products must be assessed in terms of restrictions on supplies of pulp wood on the one hand and on the other to the expectation that technological innovations, giving high output to labor which have loomed large in the past may

15/ The attitude and characteristics of such labor may be broadened to include such terms as "patient, cooperative, loyal, and eager", reflecting compositely the characteristics of high quality, productive workers. Indeed, this type of worker is found widely throughout the South. But from the standpoint of apparel factories, the wage level increases with the size of the town or city because of the rise in cost of living which goes along with size of city. Apparel factories, therefore, prefer the smaller towns, and in some cases a rural area, for a factory location.

be even more important in the future. Demand for pulp wood is already so great that it is hindering maturity[16] of enough trees of sufficient size to give high quality lumber[17]. Supplies of pulp wood could be a factor for about 15 years, or until the recent large plantings made for the soil bank can be harvested. Furthermore, some pulp and paper companies are concerned that there may be enough capacity temporarily. Taking into account all these factors, leads to an extrapolation of the growth curve to 1965 and 1970 that is substantially below the annual rate of increase from 1948 to 1960.

Miscellaneous products contain a large number of products, many closely related to a fast growing consumer market fortified by a rapidly expanding, complex industrial structure. It is expected that many of these products will find economic advantages for being produced in Georgia. Therefore, the 1948-60 pace of expansion has been maintained until 1965, with acceleration from 1965 to 1970.

16/ McCormick, J. F. and Cruikshank, James W., Forest Statistics for Georgia, 1951-53, U. S. Department of Agriculture, Forest Service, Release No. 44, Asheville, N. C., November 1953, p. 37. This report shows that the net volume gain of Georgia pines was minus 0.7 per cent yearly. This means that the rate of cut exceeded the rate of growth.

17/ In 1951-53 less than 33 per cent of the sawlogs were 14 inches in diameter or more (Ibid., p. 17).

Rapidly Growing Manufacturing Industries

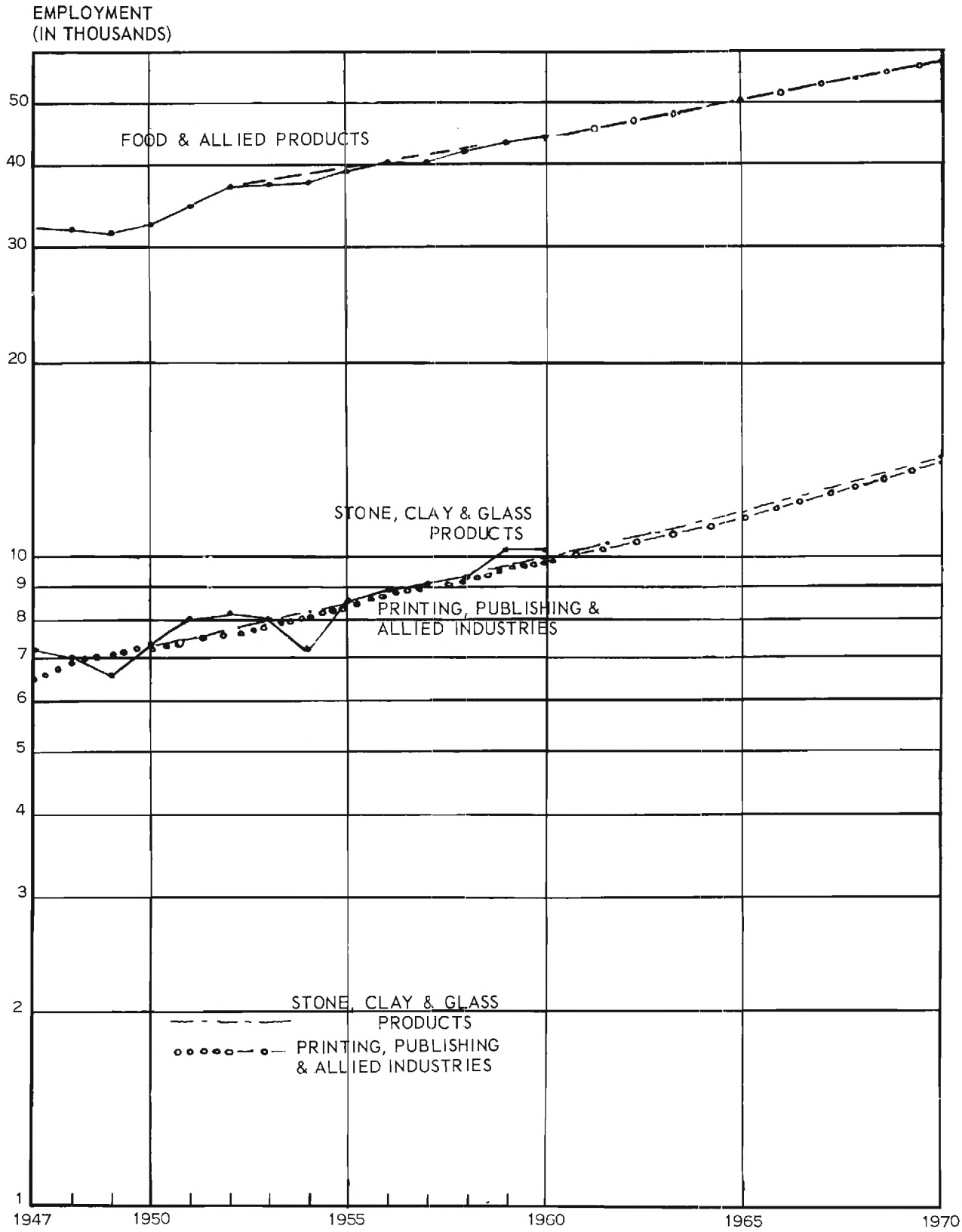
The three 2-digit industries shown in Chart 5, food and kindred products; stone, clay, and glass products; and printing, publishing and allied industries, had rates of growth between 1948 and 1960 that ranged from 2.95 per cent to 3.51 per cent yearly. All three are related to growth in the Georgia market, as measured by people and total incomes. Both population growth and the rise in per capita income have an impact on the demand for food, the latter for quality foods in particular. Stone, clay and glass products grow along with the construction industry locally, and industrialization both locally and nationally. Printing and publishing and allied industries are related to growth of the larger urban centers and to industrial and business volume. Acceleration of growth of Atlanta and other large cities in Georgia should continue and perhaps strengthen the trends over the next ten years.

The Slow Growth Industries

Chart 6 presents two slow growth industries. They are chemicals and allied products and furniture and fixtures. Chemicals and allied products are not well developed[18/] in Georgia because of lack of basic materials, such as crude petroleum, salt, sulphur, natural gas, etc., nor is there a strong market for

18/ The trend has been adversely affected, however, by shift away from mixed fertilizers during the first half of the period, when this 2-digit industry declined for a few years. Fertilizers for use in agriculture are now prepared in factories with the latest types of mixers, requiring a bare minimum labor input. Also there has been a shift in the type of chemicals used for fertilizer, and particularly in the methods of application, as illustrated by nitrogen applications in liquid forms.

CHART 5
TRENDS IN EMPLOYMENT OF THREE RAPIDLY GROWING
MANUFACTURING INDUSTRIES IN GEORGIA, 1947 TO 1960
WITH PROJECTIONS TO 1965 AND 1970

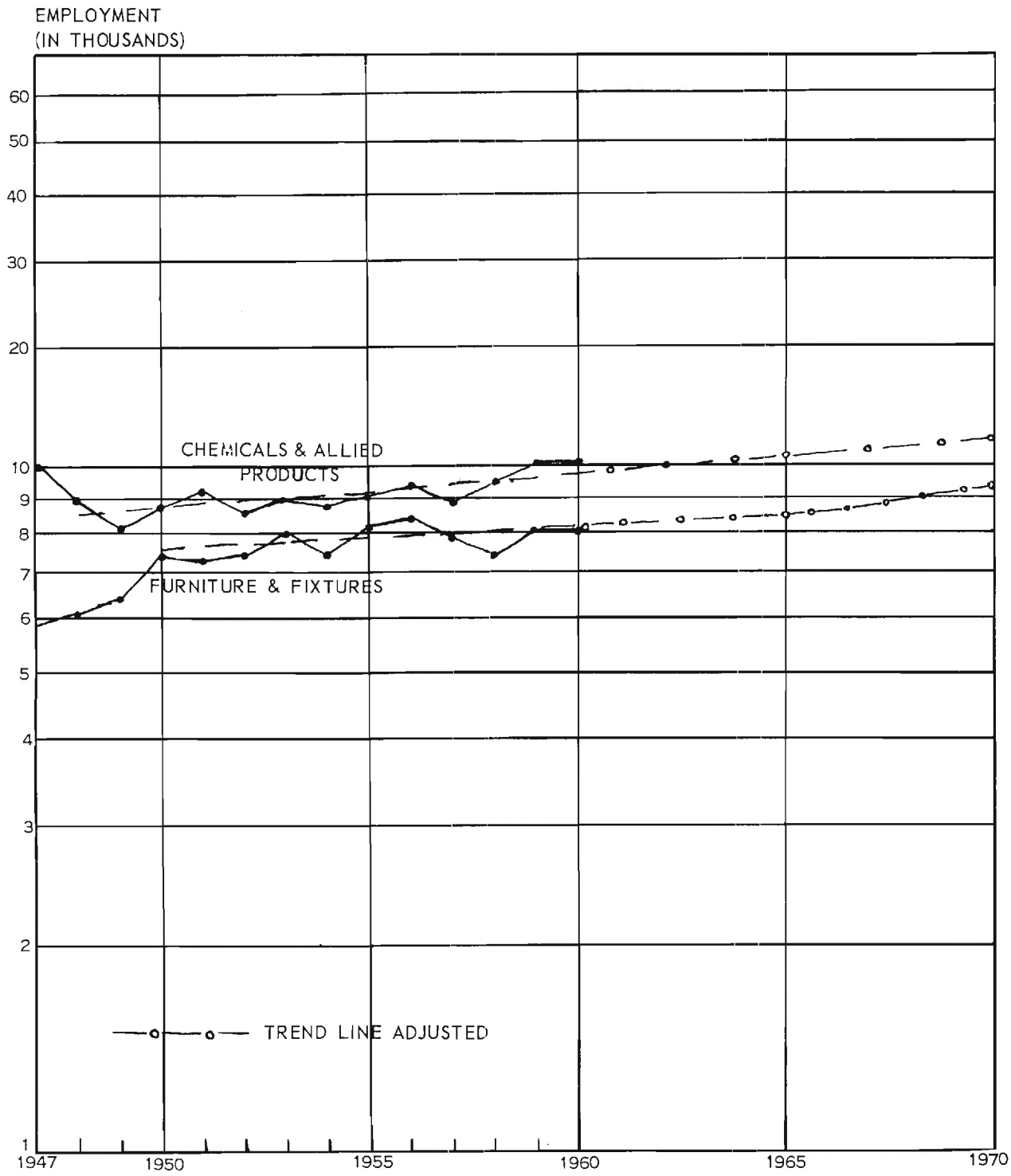


chemical products in Georgia. These limitations will not be removed in the projection period. However, establishment of an oil refinery at Brunswick[19/] or Savannah based on crude from the Near East could provide some acceleration to the growth curve extrapolated to 1965 and 1970.

Furniture and fixtures manufacturing are also weakly developed. In 1960 total employment was only 8,000, about 20 per cent of the employment in furniture and fixture manufacturing in North Carolina. Presumably, furniture products from Georgia do not enter the national market to any significant extent. Since there are no developments known at the present time which would cause this sort of a development, the projections assume a continuation of trends to 1965, followed by some acceleration in the rate of growth to 1970.

19/ See Swanson, E. W., and others, A Petroleum Refinery for Brunswick, Georgia: A Feasibility Analysis, Engineering Experiment Station, Georgia Institute of Technology, June 1958.

CHART 6
TRENDS IN EMPLOYMENT OF THE TWO SLOWEST GROWING MANUFACTURING INDUSTRIES IN GEORGIA, 1947 TO 1960 WITH PROJECTIONS TO 1965 AND 1970



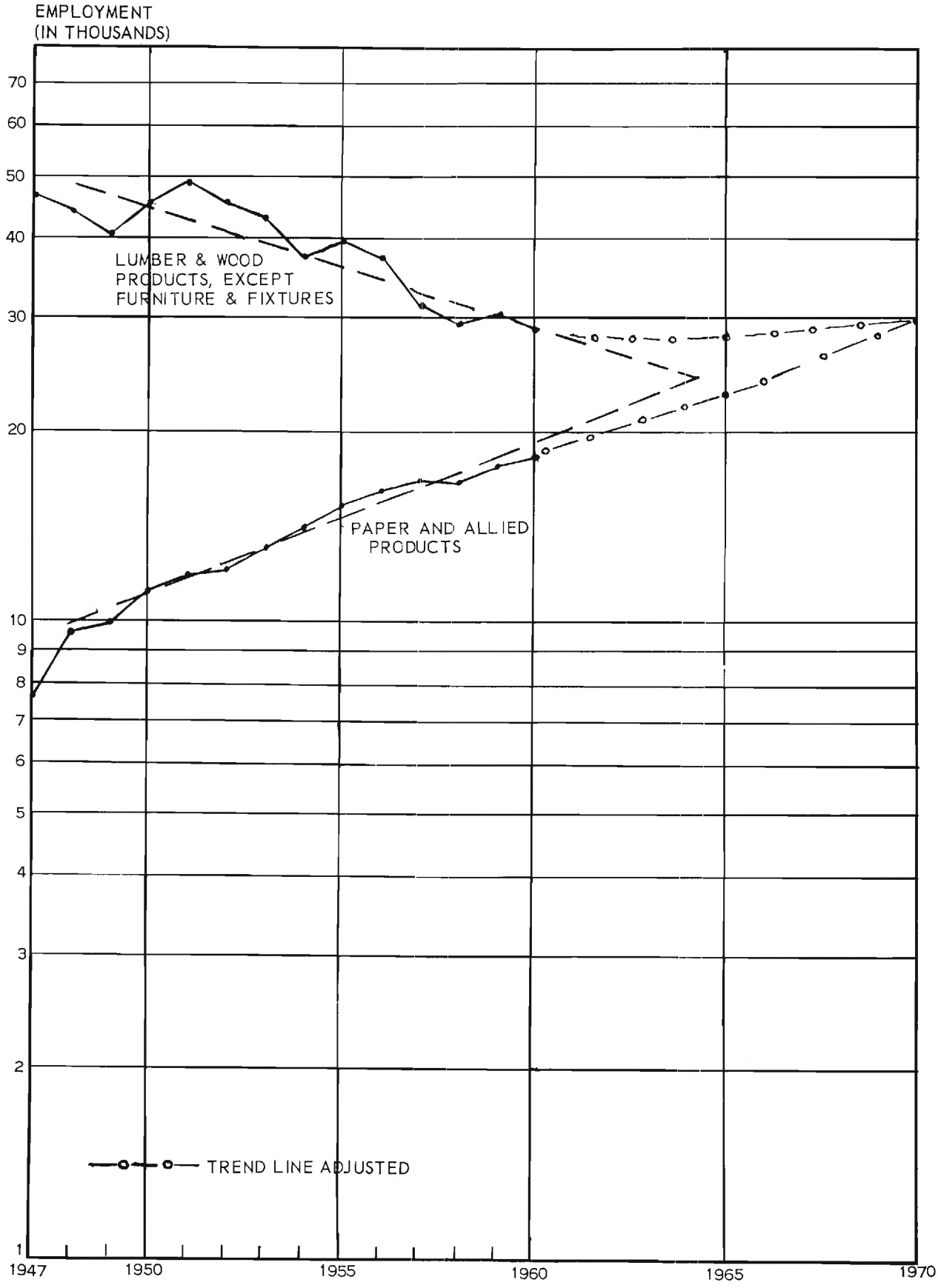
Interrelationships between Two Wood Using Industries

The competitive impacts of lumber and wood products, and paper and allied products for growing timber stock has already been touched on above. Perhaps it is accidental that the decline of employment of the lumber and wood industries occurred at the same time that employment in the paper and allied industries was expanding sharply. Yet there are some other interesting relationships. It is significant that the lumber and wood products industries lost about 19,000 jobs from 1951 to 1960, while paper and allied products industries added 7,000 jobs. See Chart 7. Other comparisons tie together employment and output changes. From 1950 to 1959, a period of ten years, Georgia's lumber production declined 31 per cent, employment, 32 per cent. During the same period the output of wood pulp in Georgia increased 221 per cent, while employment increased much less than proportionately, or 60 per cent [20/]. Professor Ritter of Emory University has estimated that employment generated in supply activities incidental to the paper and allied industries amounts to a very significant number of jobs. His estimates show for 1956 that there were 11,000 jobs in the raw material supply end, involved in pulp wood cutting, as dealers, as truckers of pulp wood, and in forestry management [21/]. On the basis of Professor Ritter's estimate, it appears that the decline of employment in lumber and wood industries may have been offset to a considerable extent by the direct and indirect employment gains connected with the pulp and paper industries.

20/ Census Bureau, Facts for Industry. See reports on lumber and on Pulp, Paper and Board, for the years 1950 and 1959.

21/ Ritter, Alan, and Others, The Place of the Pulp and Paper Industry in the Georgia Economy, Studies in Business and Economics No. 8, School of Business Administration, Emory University, 1958, p. 88.

CHART 7
INTERRELATIONSHIPS BETWEEN EMPLOYMENT IN LUMBER & WOOD PRODUCTS AND PAPER & ALLIED PRODUCTS IN GEORGIA 1947 TO 1960, WITH TREND LINES EXTENDED TO 1965 AND 1970



It is generally acknowledged that the sawmill industry in the South is not as efficient as the West Coast lumber industry, mainly because of differences in scale of operations in favor of the industry in the West. Furthermore, the lumber industry in Georgia (and the South) have been reduced to the smaller sizes of logs, second growth, and left overs, with the result that lower grades dominate the market supply. Returns to the landowner from sale of logs for lumber apparently do not justify the wait for enlarged growth relative to quicker sales for pulpwood.

Other comparisons between the two industries that must be taken into account are wage levels and investments. Ritter shows in the report cited that average earnings of workers in the paper and allied industries are more than double the average earnings of workers at sawmills and in logging operations[22/]. Investments per worker are over four times what they are in the lumber and wood products industries[23/]. Thus total investments in paper and allied industries in Georgia are probably at least double investments in the lumber and wood products industries. Lumping all the facts, the paper and allied industries show up very favorably in the short run.

Yet there are other considerations in connection with Georgia's long run development which must be weighed. Construction demand for building materials will mount progressively as Georgia accelerates its growth. All residential construction in particular should expand considerably after 1965. But building material

22/ Ibid., p. 59.
23/ Loc. cit.

substitutes[24] and imports of lumber from the West Coast will continue to play an important part in meeting these needs. The pulp and paper industry is obviously important to Georgia's economy, in terms of employment, payrolls, investments, tax payments, and so on. However, there is more at stake than comparative relationships between two industries. It is the matter of the long run maximum development of the State, which could be strongly influenced by the ready availability of construction materials. Yet there must be some method by which to keep both industries prosperous. It could be found in a combination of plans designed to promote faster growth of pines. Research into new materials for making pulp for paper may also prove to be one of the major remedies to the problem[25]. Forests should be managed in such a way as to produce larger saw logs along with regular yields of pulpwood from farm wood lots. This means the practice of scientific forestry management as a general practice throughout Georgia's agriculture. Not only will this idea need to be promoted more widely among farmers, both large and small, but it may take some direct encouragement from the State in the form of tax rebates or tax forgiveness on growing timber lots, or by other forms of subsidization in order to cause a ground swell toward the movement that will have to come if

---

24/ Substitutes for lumber are reducing the pressure of the urgent needs. The superstructure for factories and commercial buildings now depend primarily upon structural steel and reinforced concrete. The biggest problem will be for framing of the enlarged number of residential buildings. Substitutes exist here also, particularly in the sidings which utilize very largely cement blocks, brick, and asbestos siding. Floors and interior walls also are dominated by the newer building materials.

25/ Experimental research with Coastal Bermuda grass indicates that it has the necessary qualities and processing characteristics to make excellent pulp for paper, according to Mr. E. M. Parker of the Atlanta Office of the Spencer Chemical Company.

Georgia is to capitalize properly on a great natural resource in its future economic development, which promises to be quite rapid in the period from 1965 to 1970.

The pulp wood companies as a matter of policy are already practicing the kind of scientific forestry management advocated here on their timber holdings, which are managed in such a way as to maximize profits over the long run. This requires management of the cuttings for wood pulp in such a way that the optimum proportion of the timber stand is left for premium grades of saw timber.

Conclusions

The conclusion is that rates of growth in manufacturing employment have been, like general employment, affected by internal shifts between types of manufacturing. Three two-digit industries - textiles, lumber and wood products, and transportation equipment - are declining industries because of conditions peculiar to each industry, which offsets in part rapid growth in many of Georgia's other industries. Some measure of the magnitude of the adjustment is shown by the fact that the nine remaining two-digit manufacturing categories all had significant rates of growth, ranging up to better than 5 per cent yearly, and averaging 3.83 per cent yearly for the composite of the nine industries. In most of the growth type industry groups there has not been much slackening from the Korean War stimulus. Even taking into account the three declining categories, Georgia's expansion in manufacturing has averaged 1.77 per cent yearly for the last thirteen years. Because of the post-Korean War effects and internal shifts within the manufacturing category itself, the rate has been down to 0.90 per cent during the last nine years. Comparing either

rate to national trends in manufacturing employment which have been declining since 1953, shows Georgia in a very favorable light in terms of relative rates of economic development. The fact that Georgia has maintained a rate of yearly growth of even 0.90 per cent in the face of a strong national drag downward in employment in manufacturing is an excellent performance, and almost remarkable.

Table 2 contains a comprehensive classification of trend rates for all classes of employment in Georgia having analytical significance. The period of analysis, yearly rates in percentage, and number of jobs are given. The first part of the table presents data for the manufacturing categories which have been discussed. The last half of the table gives similar data for the nonmanufacturing industries which are treated in the analysis which follows.

Table 2

Annual Growth Rates for Significant Analytical Classes of Employment in Georgia, 1948-1960

Analytical Class	Yearly Rate of Growth	
	Per Cent	Number of Jobs
Manufacturing		
1. Declining Industries –		
Textile mill products	-0.75	-800
Lumber and wood products a/	-4.20	-1,600
Transportation equipment	-0.80 c/	-2,200 c/
2. All Other Manufacturing		
Industry subdivisions:	3.83	5,700
a. Fastest growing industries -		
Apparel and other finished textile products	4.45	1,600
Metals: primary, fabricated and machinery	4.95	900
Paper and allied products	5.72	800
Miscellaneous b/	4.68 d/	500 d/
b. Rapidly growing industries -		
Food and kindred products	2.95	1.100
Printing, publishing, etc.	3.23	600
Stone, clay & glass products	3.51	300
c. Slowest growing manufacturing industries -		
Chemicals and allied products	1.26	100
Furniture and fixtures	1.84	100
Contract Construction	1.98 d/	1,000 d/
Mining	2.33	100
All Other Nonmanufacturing Industries	2.95	16,300
Industry Subdivisions:		
1. Fastest growing group of industries -		
Finance, insurance, and real estate	5.76	2,100
Government (Federal, state & local)	3.45	5,600
2. Rapidly growing industries -		
Services	2.62	2,600
Trade (wholesale and retail)	2.59	5,100
3. A slowly expanding industry -		
Transportation, communication, electric, gas and sanitary services	0.41	300
TOTAL NONAGRICULTURAL EMPLOYMENT	1.78 d/	17,300 d/

a/ Excludes furniture and fixtures.

b/ Includes a wide range of products, as for example: Leather and leather products; ordnance; professional, scientific and controlling instruments; tobacco manufacture; petroleum refining and related industries; rubber and miscellaneous products; and a variety of other miscellaneous manufactures of durable and nondurable goods.

c/ For the period 1948-54 the yearly rate of growth increased 31.80% and the number of jobs increased 3,800.

d/ 1954-60.

V. Trends and Development Prospects for Major Categories of Nonmanufacturing Employment

Economic development of a country leads from agricultural and manufacturing types of activities, called primary and secondary production[26] activities, toward the tertiary or service occupations[27]. The higher the material level and the more complexly developed the economy, the greater the relative importance of tertiary forms of employment. The most significant development in the employment mix of the United States in the last half century has been this trend towards a greater percentage of employment activities in services[28]. The importance of this trend for the United States and Georgia is shown in the following comparison:

Year	Ratio of total Employment in Service Occupations	
	United States	Georgia
1930	56.6	40.0
1940	57.2	45.2
1950	62.5	56.1
1960	66.8	64.2

The rapid acceleration of the trend in Georgia caused the ratio to be only about

---

26/ Construction is also included with manufacturing as a secondary production activity, and mining, forestry and fisheries with agriculture as primary activities. We treat construction with service activities in this report because of convenience of analysis.

27/ Includes government; wholesale and retail trade; finance, insurance, and real estate; and transportation, communication, electric and gas and sanitary services.

28/ Colin Clark first called attention to this principle in his book, The Conditions of Economic Progress (MacMillan and Company, London, 1940) pp. 7, 12.

2.5 percentage points below the national average by 1960. These trends infer, and practically all authorities agree, that there will be an even higher ratio of service type occupations after 1960, apparently strongly so. The following factors point in this direction: (1) national tendency to spend a higher ratio of income on education, travel, recreation, including the demand for more services from government; (2) the growing efficiency in manufacturing, mining, and agriculture, which indicates that relatively fewer workers will be required to produce the physical products required from these areas; and (3) the rising level of per capita income which permits greater expenditure on the intangibles of life. Therefore, almost any growth which we may develop must of necessity, in order to be in line with these conditions and trends, provide for a relatively greater increase in tertiary types of employment than in manufacturing.

Turning back to table 2 where the statistical equations for this analysis are summarized in a close package, it is seen that this trend was quite true for the period 1950-60. While there is great variation in annual growth rates for even the service type employments, it is noted that the composite rate for all nonmanufacturing industries (except construction and mining) was 2.95 per cent compared to 1.77 per cent for manufacturing. The yearly growth rate for nonmanufacturing is thus seen to be 2.2 times population increase, and 1.7 times the rise in manufacturing employment. The yearly increase in the number of nonmanufacturing jobs (excluding construction and mining) was three times the expansion in manufacturing employment.

The Fastest Growing Service Industries

Chart 8 pictures two of the fastest growing service industries in Georgia. The first category is government, which includes federal, state, and local workers, all located in the state. From 1947 to 1960, the largest growth by far occurred in the number of state and local workers. In fact almost 80 per cent of the growth in government employment during the period was accounted for by the rise in the number of state and local workers. Teachers, administrators, janitors, supervisors of teachers, and secretaries are included in the state and local government workers. The greater growth in the relative importance of state and local workers in government is shown by the shift of this group of workers compared to the total. In 1947 state and local workers constituted 58 per cent of the total whereas in 1960 they accounted for 67 per cent.

Employment in government increased at the rate of 3.45 per cent or 5,600 jobs yearly between 1948 and 1960. This is the same job increase as occurred in manufacturing, although a much higher percentage rate of increase. The demand for services represented by broadened social security and educational services are important reasons for the expansion. The pressures in these areas will not be lessened; in fact the demand for educational services, including teachers and administrators, will accelerate after 1965 if the birth rate stays up as assumed to maintain an expanded need for elementary teachers. It is obvious that a 35 per cent increase in 18 year olds, beginning in 1965, will require more college level teachers and administrators. While the rate of expansion in government employment is extrapolated to 1965 at about the rate from 1952, it is shown with some acceleration in the rate of growth after 1965.

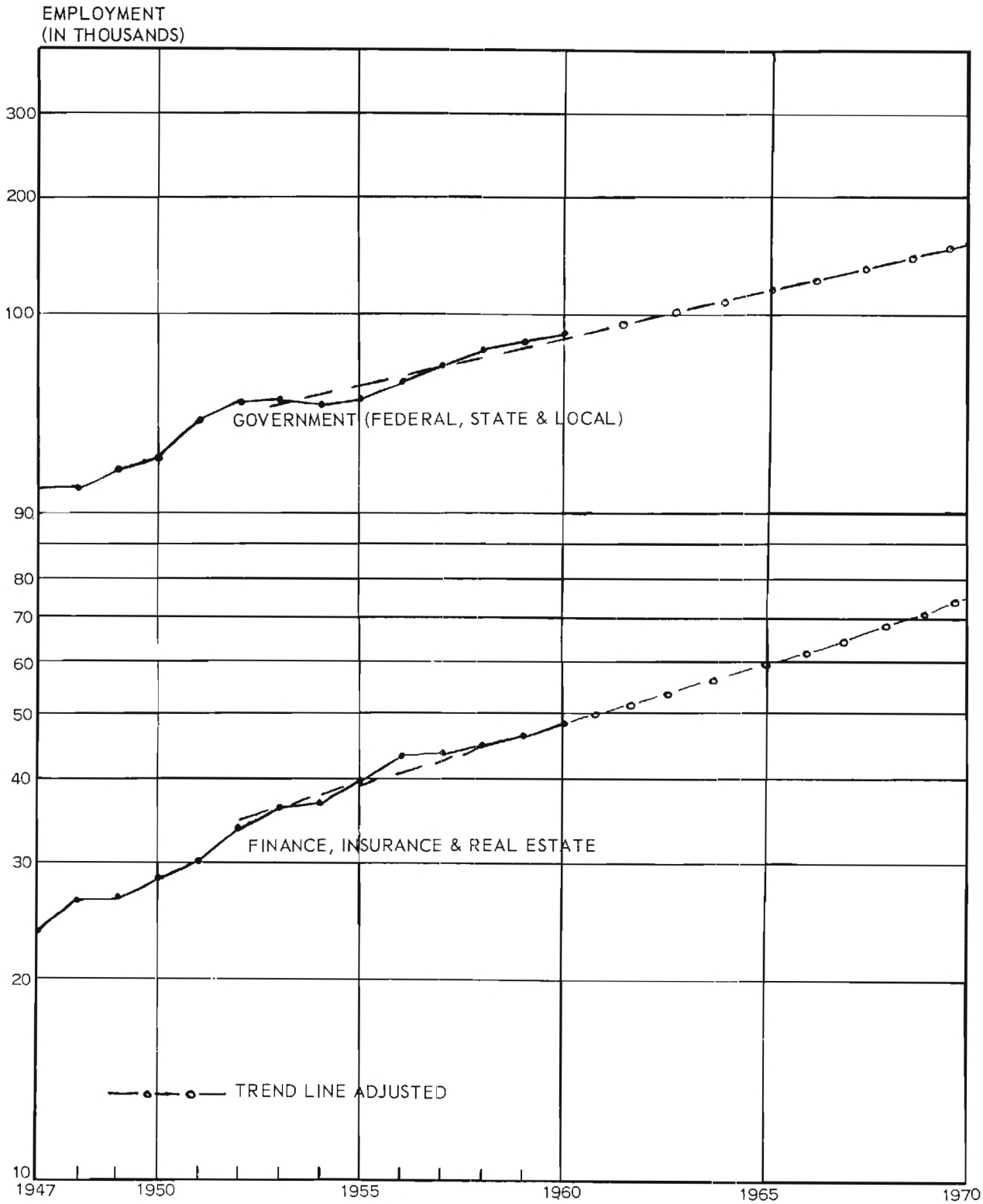
The second category shown in Chart 8 is finance, insurance and real estate. This is the fastest growing category of the 18 groups shown in table 2. Its yearly rate of increase for the period 1948-60 was 5.76 per cent compared to 5.72 per cent for paper and allied industries. Yet because of the small size of both industries the actual yearly growth in number of jobs was quite modest, 2,100 and 800 respectively. It is obvious that a complexly growing economy will require proportionately more finance and insurance. The opportunities for real estate development and speculation are enlarged also. However, because of the great upsurge from 1947 to 1952, and to some extent to 1956, it is not expected that the 1948-60 growth rate can be sustained into 1960. Consequently, the projection to 1965 has been made on the basis of the 1952 to 1960 rate, as a compromise for the earlier period; and from 1965 to 1970, some acceleration in rate is introduced in order to reflect the large demand for housing, and especially for other forms of real estate.

The Rapidly Expanding Nonmanufacturing Industries

This classification of growth industries in Georgia, pictured graphically in Chart 9, includes two nonservice and two service activities, excluding government. The former are construction and mining with annual type growth rates of 1.98 and 2.33 per cents, respectively. The latter comprise trade (wholesale and retail) and general services [29/]. The corresponding yearly rates of growth of the latter two are 2.62 per cent and 2.59 per cent.

29/ Services include barber and beauty shops, laundries and dry cleaning, auto and appliance repair shops, hotels and motels, amusements of many kinds, all kinds of business services including advertising, private clubs including golf, and many others.

CHART 8
TRENDS IN EMPLOYMENT OF THE TWO FASTEST GROWING NONMANUFACTURING INDUSTRIES IN GEORGIA, 1947 TO 1960 WITH PROJECTIONS TO 1965 AND 1970



Contract construction shows a great surge due to the Korean War, especially during 1950 and 1951. But after 1951 the rise, while sustained, is quite moderate, being in line with the general growth of Georgia's economy. The projection from 1960 to 1965 therefore reflects extrapolation of growth rates from 1952 to 1960. However, the stepped up expansion of this industry from 1965 to 1970 is in line with a higher volume of construction required during that period to meet housing, industrial, and other demands.

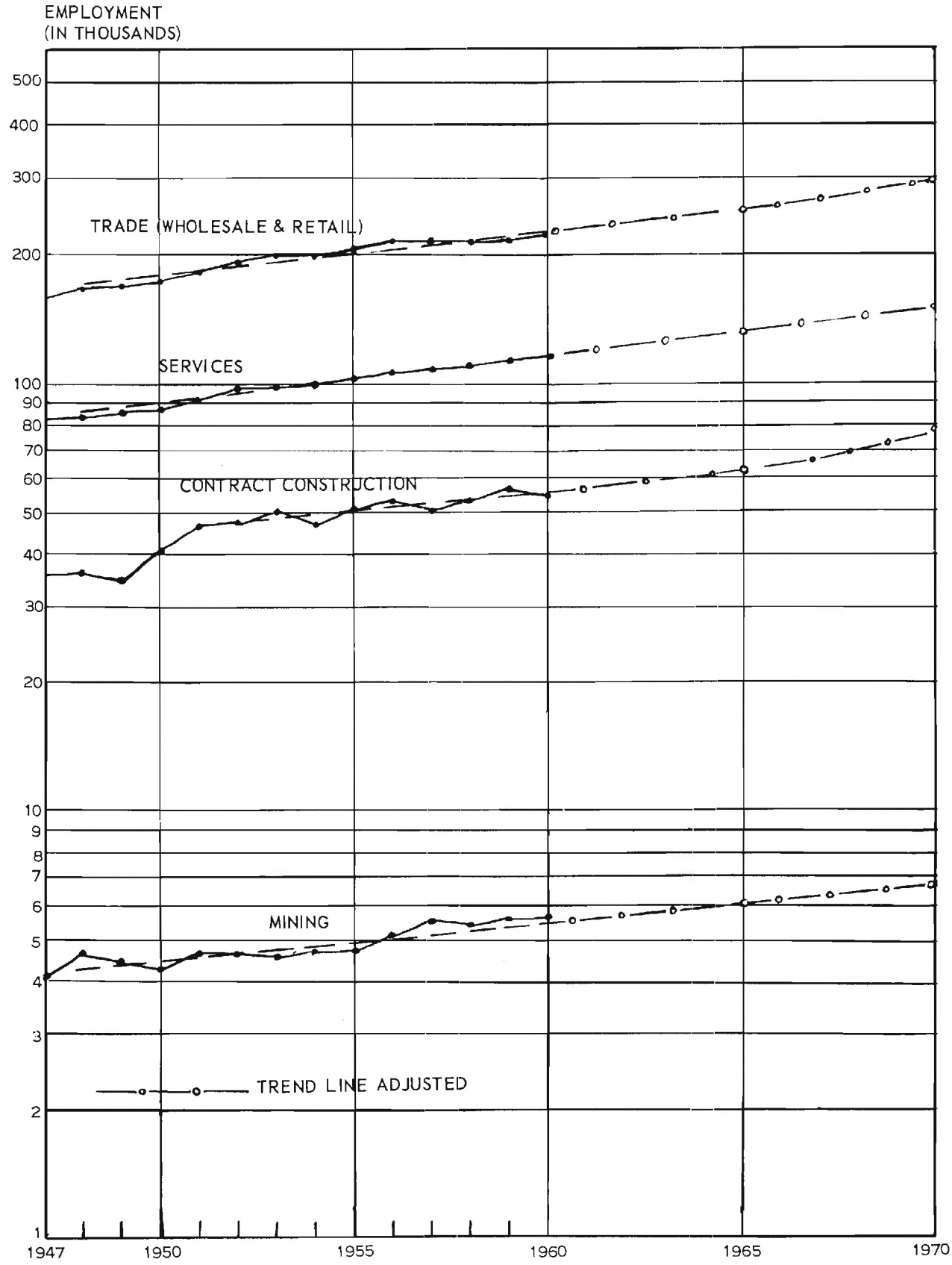
Jobs in mining show in general a sustained trend from 1947, except during 1956 and 1957 when there was a temporary spurt. Consequently, employment in mining is projected to 1965 and 1970 by simple extrapolation from the 1948-1960 yearly growth rates.

Employment in wholesale and retail trade, and also in services show sustained trends from 1947. Projections of both to 1965 are extrapolations from the 1948-60 yearly rates, except the expected expansion of trade from 1965 to 1970 permits some small acceleration in growth, which may follow from stepped-up buying and selling that must accompany the greater activity in manufacturing, construction, and government predicted for 1965 to 1970.

The Slow Growth Category

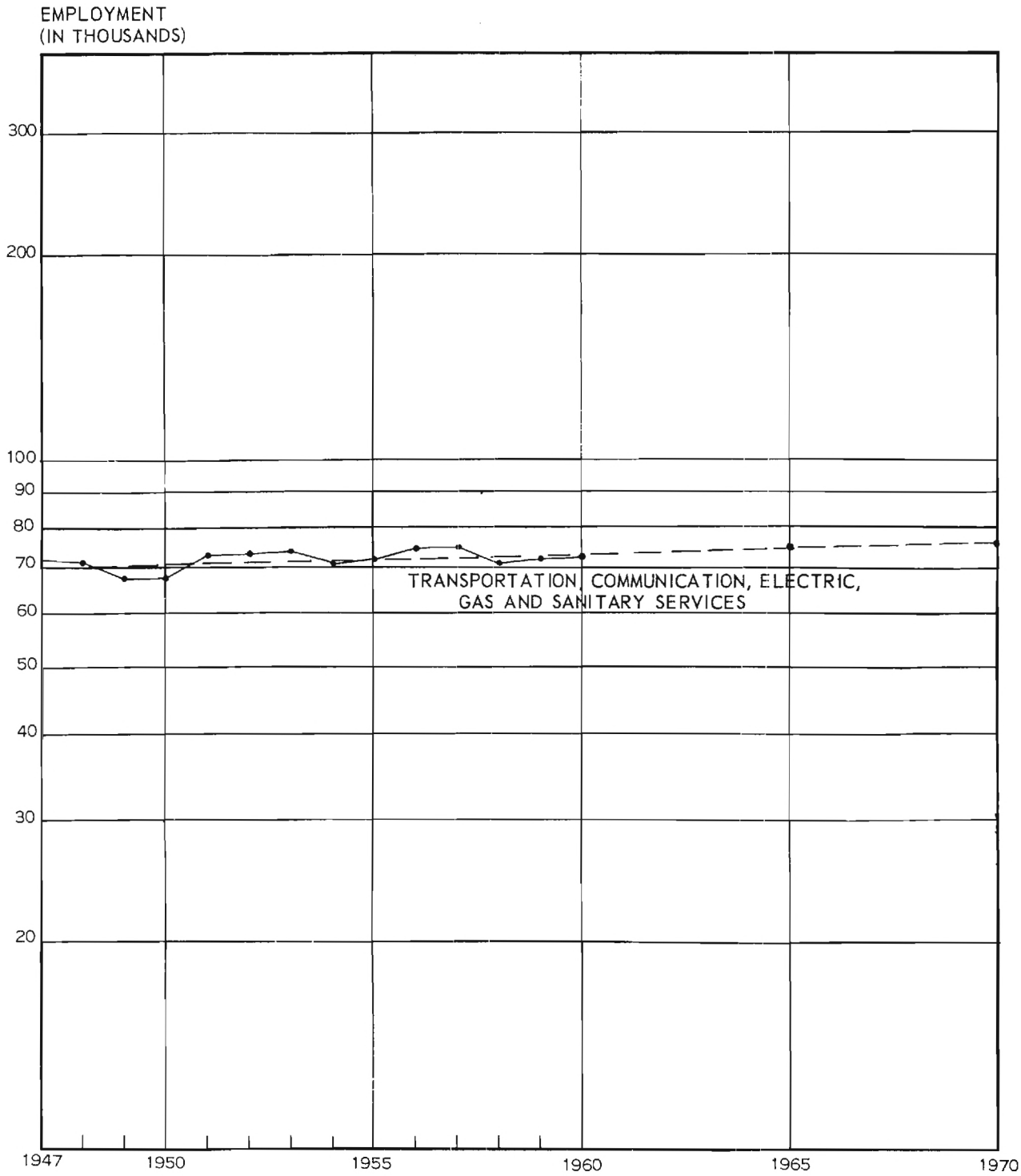
A composite of several public utility type industries are included in this group. They are transportation, communication, electric, gas and sanitary services presented in Chart 10. The yearly growth rate for 1948 to 1960 was 0.41 per cent, the lowest annual change among all the 18 categories studied in detail. Analysis

CHART 9
TRENDS IN EMPLOYMENT OF FOUR RAPIDLY GROWING NONMANUFACTURING INDUSTRIES IN GEORGIA, 1947 TO 1960 WITH PROJECTIONS TO 1965 AND 1970



of the chart shows some tendency to respond to war conditions and to the business recovery in 1955. Yet this category represents a group of industries which have great flexibility in the use of capacity. They have highly organized research and development activities, which have made tremendous strides in automation of freight handling and communication activities. Management, for the most part, is alert and anxious to utilize such research findings. In making projections for the types of industries which constitute this grouping, all three tendencies are assumed to continue indefinitely in the future. Hence, the projections for 1965 and 1970 represent simply an extrapolation of the historical yearly growth rates from 1948 to 1960.

CHART 10
TRENDS IN EMPLOYMENT OF A SLOWLY EXPANDING NONMANUFACTURING INDUSTRY IN GEORGIA, 1947 TO 1960 WITH PROJECTIONS TO 1965 AND 1970



VI. Consolidated Estimates of Nonagricultural Employment

The details of the projections by 18 major categories, given for 1965 and 1970 and compared to the 1960 actual employment, are given in table 3. The projections for both 1965 and 1970 are presented in the aggregate and by industry detail. They are not separate projections but are mutually interdependent. This means that the two sets of projections were adjusted simultaneously by successive approximations. The fact that there are small differences of a few thousand jobs between the aggregate projections, based on seven separate projections, in comparison with the projections based on eighteen separate industry groups, is due to rounding and not to any accidental agreement between the two sets of projections. In fact, the detailed industry projections, since they were based on more complete analytical considerations, tended to dominate the aggregate projections of "all other manufacturing" and the nonmanufacturing category.

The totals for manufacturing and nonmanufacturing indicate the following percentage increases (based on projections of industry groups):

	1960 to 1965	1965 to 1975
Manufacturing	6	14
Nonmanufacturing	14	17
Total Nonagricultural Employment	12	16

It is noted that substantially larger increases from 1965 to 1970 are expected in manufacturing. Nonmanufacturing will be about 20 per cent larger in the last five

years. The composite effect on total nonagricultural employment is a compromise between the two extremes, or 33 per cent greater growth in 1965-70 than in 1960-65.

The total figures given for nonagricultural employment do not include military forces on military posts in Georgia, which are employed in national defense. An even more important omission is a mixed category which includes the proprietors, self-employed, unpaid family workers, and domestics. Excluding the military, farm proprietors, and farm labor, the omission amounts to about 16 per cent of total nonagricultural employment. Not considering adjustments for the three most obvious omissions[30], the yearly increase in nonagricultural employment amounts to 24,100 jobs per year from 1960 to 1965, and 38,700 jobs from 1965 to 1970. Assuming an average loss of 6,000 jobs from agriculture yearly from 1960 to 1965, the net gain in total employment[31] is placed at 18,100 annually, and assuming a loss of 4,000 agricultural jobs yearly[32] from 1965 to 1970, the net gain in total employment is 34,700 yearly. The gain of jobs yearly during 1965-70 is thus 92 per cent greater than during 1960-65; 11 per cent of this gain, however, is due to the 2,000 less rapid decline in agricultural employment.

30/ The Bureau of Labor Statistics monthly estimate of nonagricultural employment also make the same omissions and are therefore comparable to the figures given here.

31/ "Total employment" but excluding the military and also the miscellaneous class of proprietors, self-employed, etc.

32/ The decline in agricultural jobs of 6,000 yearly between 1960-65 and 4,000 yearly from 1965-70 should be compared with a loss of 16,000 agricultural jobs yearly from 1940 to 1950, and 9,000 jobs yearly from 1950 to 1960. The assumption for 1960 and 1970 is in line with the concensus of opinion that the force of agricultural adjustment is declining in intensity.

II. Tertiary Industries						
A. Aggregate Projections	---	730.0	---	860.0	---	
B. Projections for Industry Categories:						
1. Fastest growing industries -						
a. Government (Federal, State & Local)	186.0		215.0		259.0	39.2
b. Finance, insurance and real estate	48.7		58.0		75.0	54.0
2. Expanding rapidly -						
a. Trade (wholesale & retail)	221.1		252.0		300.0	35.7
b. Services	114.0		131.0		150.0	31.6
3. A slowly expanding industry - Transportation, communication, electric, gas and sanitary services	72.5		74.5		76.0	4.8
4. Total of Industry Projections	642.3	---	730.5	---	860.0	33.9
III. Total Nonagricultural Employment[c/]	1,040.8	1,159.6	1,161.1	1,351.8	1,354.7	30.2
IV. Gain in Nonagricultural Employment:						
A. Total			120.3		193.6	
B. Yearly			24.1		38.7	
V. Gain in Nonagricultural Employment Adjusted [d/] :						
A. Total			90.3		173.6	
B. Yearly			18.1		34.7	

---

a/ Except furniture and fixtures

b/ Includes a wide range of products, as for example:
Leather and leather products; ordnance; professional, scientific and controlling instruments; tobacco manufacture; petroleum refining and related industries; rubber and miscellaneous products; and a variety of other miscellaneous manufactures of durable and nondurable goods.

c/ BLS series. Data are unadjusted for self-employed, unpaid family workers, domestics, and military forces.

d/ Corrected for probable further decline in agricultural employment.

VII. Economic Projections for 1965 and 1970

The next step beyond employment projections in state planning is the impact of the anticipated changes on the state's economy. The most significant economic measures of a state's growth, in addition to employment, are population, total personal income, and retail sales. Deduction of population from employment is a simple matter of applying an employment ratio. In 1950 the proportion of the total population employed was 34.5 per cent and in 1960, 35.5 per cent.

Because of an improved distribution in the population cohorts, it is assumed that the ratio of population employed will rise to 36.5 per cent in 1965 and to 38 per cent in 1970. A greater gain in the employment ratio from 1960 to 1965 and from 1965 to 1970 than occurred from 1950 to 1960 is considered logical for the following reasons. The rapid rise in births beginning shortly after World War II distorted the population distribution toward the younger ages and thereby reduced the employment ratio. This trend continued to build up in the younger age classes until 1960. Beginning about 1963 the distribution will move toward the older age classes as 18 year olds mature into the labor force, with an acceleration in this tendency beginning in 1965. This will continue until 1970 and beyond. All these shifts in population toward the older age classes will raise the ratio of population employed. However, this trend will be reinforced by the increasing tendency for women to work and by the continued rapid growth of urban centers where the employment ratio of the entire population is substantially higher than for areas in the rural centers and small towns. Furthermore, the rate of outmigration of Georgia citizens will continue to decline,

as the trend clearly shows. Since migrants represent a higher proportion of the population of working age, we find further support for the rise in ratios.

Application of assumed population ratios to employment gains shown in table 3 indicates the following population increases:

	1960-65	1965-70
Yearly increase in employment	18,100	34,700
Employment ratio	.365	.380
Yearly increase in population	49,600	91,000
Five year increase in population	248,000	455,000

The population gain in the ten year period is 703,000. This will represent over 90 per cent of the expected natural increase, which means only a ten per cent population drain from the state in the next ten years compared to 30 per cent from 1950 to 1960. The greatest population loss from the State will be from 1960 to 1965; there may be a slight net movement of population to Georgia during some of the years in the period 1965 to 1970.

The projected population for Georgia for July 1, 1965 is 4,203,000 and for July 1, 1970, 4,658,000. The latter figure represents a gain from the July 1, 1960 comparable figure of 18 per cent, which compares to a gain of 14.5 per cent during 1950 to 1960.

Projections of total personal income may be approached by multiplying total employment by an estimated projection of productivity per worker. There are two

difficulties with this model of personal income. First, total employment has not been accurately determined, only the total nonagricultural employment. Second, accurate estimates of current productivity per worker are unknown and also the yearly rise in productivity per worker or per hour are even more indeterminate.

An alternative personal income model is the product of total population and per capita income. The first parameter (population) has already been calculated. Per capita income can be determined by establishing the relationship of Georgia's per capita income to national per capita income. The latter can be readily determined from projections of Gross National Product, which have been calculated by the U. S. Department of Labor[33/] for 1965 and 1970, along with comparable population. The Labor Department projections of GNP for 1965 is 600 billion dollars and for 1970, 750 billion dollars (in 1958 dollars). The comparable population figures are 190 million and 208 million. Assuming that the price level will rise 0.75 per cent per year compounded (or about 1 point per year)[34/] and that personal income is 79 per cent of GNP, the national per capita income is $2,637 for 1965 and $3,115 for 1970[35/].

The Labor Department projections fully reflect the upsurge of 18 year olds beginning about 1965, already discussed at several points heretofore.

33/ Manpower Challenge of the 1960's, ibid., p. 3.

34/ This is close to the long run historical relationship.

35/ The projected U. S. GNP in current dollars is 634 billion dollars for 1965, and 820 billion dollars for 1970.

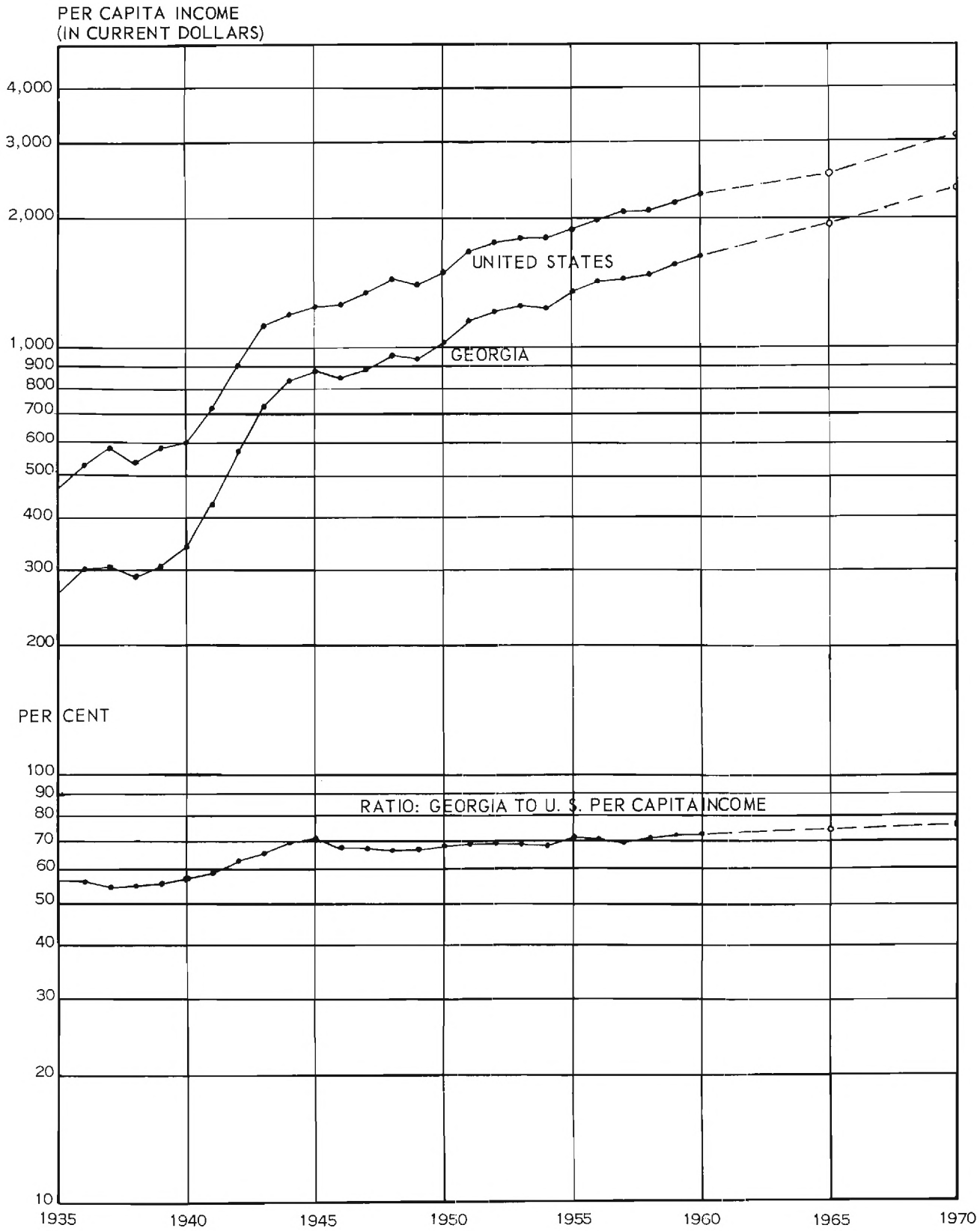
The long run relationship of Georgia per capita income to national per capita income is given Chart 11. As so many analysts have pointed out for Southern States, per capita income for Georgia has been rising relative to national per capita income, as Chart 11 shows.

The ratio of Georgia per capita income to national per capita income made the most rapid gain from 1939 to 1945, and in recent years has shown but a gradual rise. It seems reasonable to project the 1953 to 1960 ratios to 1965 and 1970 by linear formulas. The procedure gives a ratio of 74 per cent for 1965 and 76.5 per cent for 1970. Applying these ratios to the national per capita incomes projected for 1965 and 1970 results in a Georgia per capita income of $1,954 for 1965 and $2,371 for 1970. Note from Chart 11 that both U. S. per capita incomes and Georgia per capita incomes show an acceleration in the rate of rise from 1965 to 1970 over the 1960 to 1965 rates. This difference is, of course, consistent with the assumption throughout this report of a more rapid economic growth for the period 1965 to 1970.

The second model for derivation of total personal income described above is based on the product of per capita income multiplied by total population. Both parameters for this equation have been determined. Application of the model, therefore, produces estimates of personal income for Georgia for 1965 of 8.2 billion dollars and for 1970 of 11.0 billion dollars[36/].

36/ Both projected values of personal income are given in currently prevailing dollars for each projection year.

CHART 11
COMPARISONS OF TRENDS IN U.S. AND GEORGIA
PER CAPITA INCOMES, 1935 TO 1960, WITH PROJECTIONS TO
1965 AND 1970



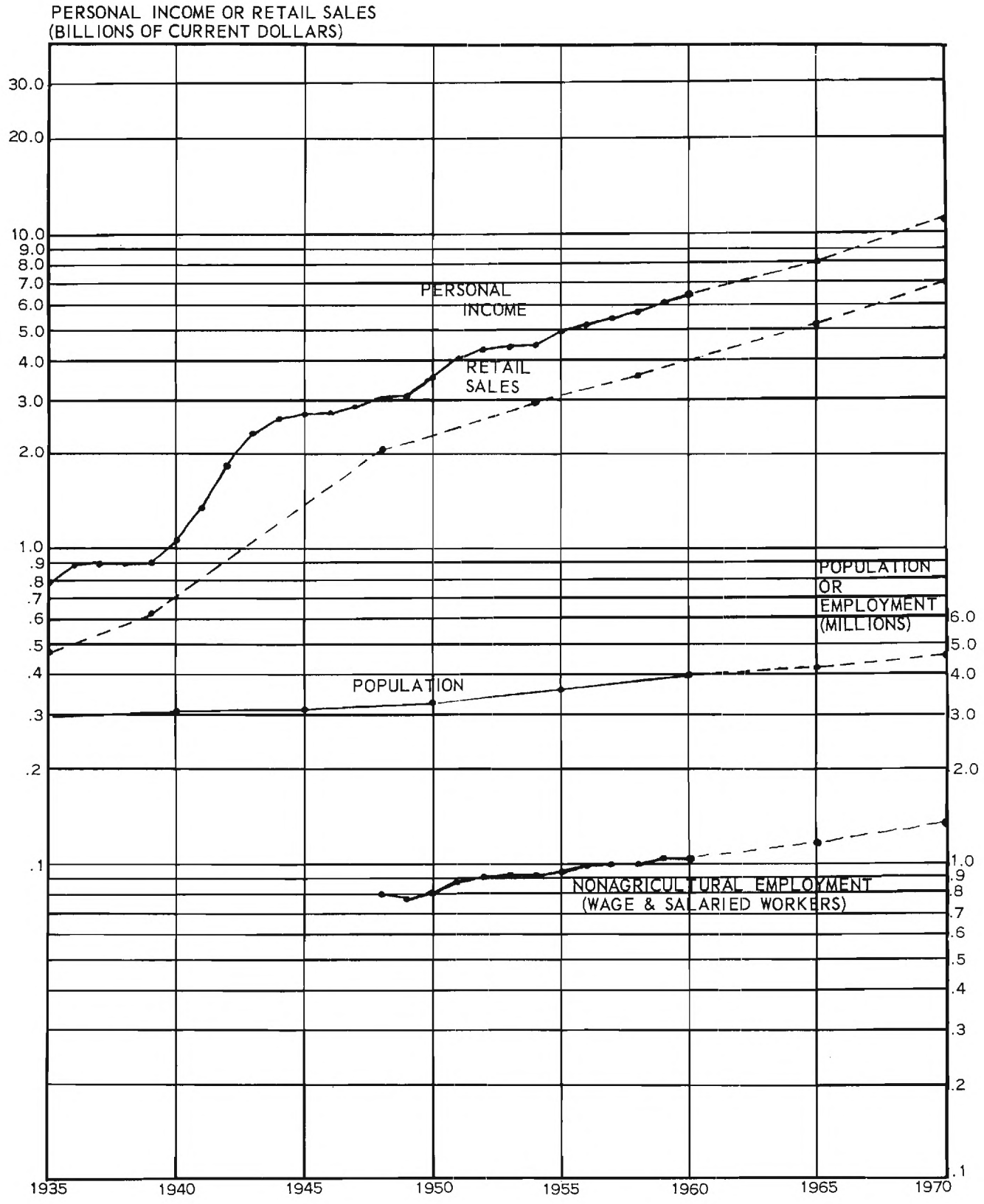
The final projection is for retail sales. Study of the relationship between increase in personal income and retail sales for the census years 1935, 1939, 1948, 1954, and 1958 shows a ratio of 64.4 per cent. Application of this ratio to the projected personal income for 1965 and 1970 results in 5.3 and 7.1 billion dollars of retail sales respectively.

Chart 12 summarizes the five aggregate projections which have been built up from the detailed analysis of employment potentials for industry groups. The projected values show the following percentage increases during the different five year periods:

	1960-65	1965-70
Total nonagricultural employment	12	16
Total population	6	11
Per capita income	20	21
Total personal income	28	35
Total retail sales	28	35

The percentage increases indicate that while 1960 to 1965 is expected to produce a significant expansion of the aggregate measures of the state's economy, the period 1965 to 1970 will be substantially better on all counts.

CHART 12
TREND COMPARISON OF EMPLOYMENT, POPULATION, PERSONAL INCOME, AND RETAIL SALES, 1935 TO 1960, WITH PROJECTIONS TO 1965 AND 1970



VIII. Major Development Problems During the 1960's

During the 1960's it is expected that the State will be beset by numerous developmental problems but three of the most important will be the expanding need for skilled workers, an adequate highway system, and the long felt need for a comprehensive and over-all state planning and development agency. Modern, complex industry has shown a tendency to expand the use of managerial, skilled, and semi-skilled workers. It has been shown that a scarcity of skilled workers exists especially in metal working. In fact, the magazine Steel pointed out at least 5 years ago that the need for skilled workers would triple by 1965[37/]. The deficiency is also great in Georgia, and trade schools and apprenticeship on-the-job training of workers in Georgia is not nearly keeping pace with requirements, nor does long-run planning appear to anticipate the demand for skilled workers, five or even ten years from now.[38/]

The scarcity of highly skilled labor limits industrial expansion in at least three ways. Migration of firms into the South may be inhibited by the inability to find key production men in the localities where it is desired to locate, or even to import them. Lack of sufficient trained workers annually implies lack of facilities and a training program of sufficient size to assure these companies that future needs for replacement and addition of skilled workers will be met. Second, expansion of branch and local plants may be delayed, or prevented even, by inability to hire the

37/ Steel, July 16, 1956, p. 61.

38/ See Mallet, Mrs. Maria M., Atlanta Skilled Workers in Manufacturing, Georgia Department of Labor, Employment Security Agency, State Employment Service, 1958, pp. 2, 13-15.

necessary skilled labor. Third, new firm starts are to a great extent dependent upon the rate at which skilled workers stop as employees to become their own bosses. It is important to our economy, and particularly to a developing economy, that new firm starts be kept at a high rate.

From the standpoint of recovery from a depression, scarcity of skilled workers, particularly key workers may delay or prevent altogether the start of a promising enterprise. This would prevent employment of a number of semi-skilled and unskilled workers which would normally be employed to support the key workers. This in turn would prevent a multiplier effect on the community from respending of wages of workers who might have been employed if the enterprise could have gotten off the ground. We have for too long ignored, or employed the improper methods to attract young persons into careers as skilled technicians and workers. It is handicapping growth of our economy and in the present situation preventing as rapid recovery as would be possible.

The whole concept of vocational schools, for instance is not properly astute. We live in a status society, and everyone resists to the last moment a course of action for a child which destroys the status image. Yet the child may have talents for the concrete but not for the abstract and theoretical or other characteristics for college. Changing the name of our vocational high schools to "Technical and Trade Schools" would provide status. In Germany almost every city of any size has one or more technische schule, often in the most prominent location in town. Some of our more industrialized states and cities of the great Industrial Belt are recognizing

the need for technical high schools and are so calling them. We need to name them something else other than vocational schools in Georgia if we are to succeed in attracting the proper number of talented high school boys into a worthy occupation which brings both excellent pay and prestige to the person with such training.

Another problem is of course adequate highways. Georgia's highways for some reason do not reach a par with those of South Carolina or even Alabama, although it seems recently there is greater activity on road construction. The great population and industrial centers must have access through all common means of transportation to necessary raw materials in the state or anywhere else in the nation. They must be able to move the final products to the markets of the nation and the world wherever they may be, with dispatch, efficiency, and at competitive costs. Great centers of enterprise like Atlanta, Savannah, Augusta, Columbus, Macon, Rome, and Albany have a circular flow of trade and service activities in their respective hinterlands. Consequently, prosperity and growth on the part of these generators of activity have impacts on the cities and towns within the range of their influence and business connections. When the larger centers are hindered by failure to provide a sufficiency of public transportation facilities, as for instance roads, the growth of such centers is obviously retarded but it also affects all other centers which have contacts with the bigger growing centers.

Many states in America have a State Planning and Development Board or some similar body, which heads up all the planning and developmental activities. Centralized planning and long range capital planning have the power to generate a

certain amount of economic growth independent of actions in the private enterprise economy. Without long range planning in this area of public outlays, much of value is lost to the prosperity and development of the state. Certainly, the Board or the Committee should be responsible directly to the governor of the state because it must have rapport with the current administration and also approval of the political group that is in power. On the other hand the professional staff would need to have a great measure of continuity, of course, in order to conduct research and keep up to date the planning activities for the State and its areas without having the disorganization, confusion, and delay which of necessity follows a complete replacement of such staff people every four years.

Research and planning of the nature that is statewide is complex and cannot be picked up effectively by a new professional group on short order. In fact, some of the most effective and productive research and planning is the culmination of continuous probing and seeking of information over a period of considerable length in many cases. Planning is equally a product of a long gestation period. Some of the most able planners have seen ideas of development come to fruition only after many years of plan revision, prodding, and salesmanship.

IX. Statistical Appendix

Table 1

Trends in Manufacturing Employment of Georgia Compared to Adjacent States, Other Southern States, Selected Industrial States Outside the South, and National Employment in Manufacturing, 1947 to 1960

(In Thousands of Workers)

Year	GEORGIA	Adjacent States				Other Southern States			Selected Industrial States			United States
		Alabama	Florida	South Carolina	Tennessee	North Carolina	Mississippi	Texas	California	Michigan	New York	
1947	275.5	224.1	92.8	202.1	253.6	411.8	91.9	323.6	721.6	1041.7	1904.0	15,290.0
1948	282.0	226.9	94.9	210.0	259.1	418.4	90.0	339.6	734.2	1058.3	1886.0	15,321.0
1949	265.3	206.4	90.8	199.5	235.8	387.1	77.4	335.9	701.5	981.1	1764.9	14,178.0
1950	286.5	216.1	97.7	209.2	247.2	418.3	86.4	353.2	759.7	1063.3	1828.6	14,967.0
1951	307.1	225.3	108.7	218.4	264.6	432.9	94.3	401.4	892.5	1112.0	1918.2	16,104.0
1952	311.0	226.4	115.0	220.1	274.9	435.0	95.3	424.3	993.6	1096.9	1955.4	16,334.0
1953	321.1	234.9	122.4	225.7	291.1	448.7	98.6	437.8	1060.8	1222.0	2027.1	17,238.0
1954	312.3	226.3	128.1	218.6	275.8	436.8	95.7	428.4	1048.6	1061.2	1914.5	15,995.0
1955	334.9	235.4	138.5	229.8	292.4	460.4	104.7	446.4	1121.0	1164.2	1908.4	16,563.0
1956	338.9	241.2	148.4	231.9	301.0	470.6	106.8	471.9	1202.6	1081.0	1943.3	16,903.0
1957	331.3	243.7	161.3	228.5	297.0	467.0	106.1	483.8	1204.7	1025.5	1922.2	16,783.0
1958	319.6	232.5	177.5	227.5	286.4	469.6	113.0	480.9	1211.2	886.3	1871.3	15,468.0
1959	338.8	237.1	196.7	236.5	307.0	494.1	117.9	487.2	1283.7	949.8	1903.6	16,168.0
1960	338.7	234.9	206.4	243.9	314.8	503.2	119.6	488.9	1328.0	956.5	1907.3	16,337.0

Source: Atlanta Regional Office, U. S. Bureau of Labor Statistics

Table 2 - Georgia Nonagricultural Employment, Annual Averages, 1947-1960
All Employees
Wage and Salary, except Domestics
(Replacement Series - in thousands)*

Industry	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Total	759.4	779.3	769.6	806.6	872.3	905.0	929.7	915.0	959.5	994.2	997.4	989.1	1,030.1	1,040.8
Mining	4.1	4.6	4.4	4.2	4.6	4.6	4.5	4.7	4.7	5.1	5.5	5.4	5.6	5.6
Contract Construction	36.0	36.0	34.8	40.3	46.4	46.8	50.1	47.1	51.2	53.3	50.6	52.6	56.8	54.2
Manufacturing	275.5	282.0	265.3	286.5	307.1	311.0	321.1	312.3	334.9	338.9	331.3	319.6	338.8	338.7
Durable goods	82.8	81.2	76.9	84.8	97.3	100.3	104.1	100.2	111.6	113.6	107.5	97.4	105.2	102.7
Lumber & wood products, except furniture	46.5	44.0	40.7	45.1	49.0	45.3	43.2	38.7	39.9	37.3	31.4	29.3	30.4	28.9
Furniture & fixtures	5.9	6.1	6.4	7.4	7.3	7.4	8.0	7.5	8.2	8.4	7.9	7.4	8.1	8.0
Stone, clay & glass products	7.2	7.0	6.6	7.3	8.0	8.2	8.0	7.7	8.6	8.9	9.1	9.4	10.3	10.3
Primary metal industries	3.9	3.9	3.4	3.5	3.7	3.8	4.1	3.8	4.3	4.4	4.5	3.9	4.4	4.4
Fabricated metal products	3.6	3.7	3.3	3.8	4.8	4.5	5.0	5.3	5.6	6.0	6.4	5.9	6.1	6.9
Machinery (except electrical)	7.5	7.0	5.7	6.0	7.1	7.1	6.7	6.6	7.3	8.6	8.5	8.1	8.2	8.9
Electrical machinery, equipment & supplies	1.1	1.2	1.0	1.0	1.4	1.6	2.0	2.7	3.2	3.9	4.0	3.8	4.3	4.7
Transportation equipment	3.9	5.5	6.8	7.7	12.5	18.4	23.0	24.0	30.2	31.2	30.6	24.4	28.1	25.4
Other durable goods 1/	3.2	2.8	3.0	3.0	3.5	4.0	4.1	3.9	4.3	4.9	5.1	5.2	5.3	5.2
Nondurable goods	192.7	200.8	188.4	201.7	209.8	210.7	217.0	212.1	223.3	225.3	223.8	222.2	233.6	236.0
Food & kindred products	32.1	32.0	31.5	32.6	34.9	37.2	37.5	37.8	39.5	40.4	40.4	42.1	43.5	44.6
Textile mill products	106.0	110.6	99.1	107.3	111.3	107.5	108.1	102.3	105.4	103.7	100.9	96.5	100.5	99.1
Apparel & other finished textile products	26.6	28.7	28.9	30.5	30.8	33.1	36.8	36.2	40.3	40.7	41.3	41.8	45.7	47.5
Paper & allied products	7.6	9.7	9.9	11.3	11.8	12.2	13.1	14.1	15.3	16.2	16.9	16.7	17.8	18.4
Printing, publishing & allied industries	6.5	6.9	7.1	7.3	7.5	7.6	7.9	8.2	8.5	8.9	9.1	9.3	9.7	10.1
Chemicals & allied products	10.0	8.9	8.1	8.7	9.2	8.5	8.9	8.7	9.1	9.4	8.9	9.5	10.1	10.0
Leather & leather products	2.4	2.3	2.1	2.5	2.3	2.5	2.5	2.6	2.8	3.3	3.5	3.6	3.7	3.6
Other nondurable goods 2/	1.5	1.7	1.7	1.5	2.0	2.1	2.2	2.2	2.4	2.7	2.8	2.7	2.6	2.7
Transportation, Communication, Electric, Gas & Sanitary Services	71.8	71.0	67.2	67.8	72.7	72.7	73.3	70.7	71.8	74.9	74.2	70.8	71.9	72.5
Trade	159.0	166.0	168.7	172.2	181.0	191.6	199.5	199.3	204.8	214.6	215.3	211.3	218.9	221.1
Finance, Insurance & Real Estate	23.5	26.1	26.5	28.1	30.0	33.7	36.1	36.8	39.7	43.2	43.9	44.9	46.7	48.7
Services	82.5	83.7	85.7	86.9	92.5	97.6	97.6	99.1	102.8	106.5	108.7	108.9	111.2	114.0
Government	107.0	109.9	117.0	120.6	138.0	147.0	147.5	145.0	149.6	157.7	167.9	175.6	180.2	186.0
Federal	42.8	41.0	43.7	45.3	61.1	66.3	63.5	59.1	60.4	60.9	61.0	62.3	62.8	62.3
State and local	64.2	68.9	73.3	75.3	76.9	80.7	84.0	85.9	89.2	96.8	106.9	113.3	117.4	123.7

*Data have been revised based on 1957 Standard Industrial Classification definitions and are comparable with data previously published for 1958 - 1960.

1/ Includes ordnance; professional, scientific and controlling instruments; and miscellaneous manufacturing industries.

2/ Includes tobacco manufacture, petroleum refining and related industries, rubber and miscellaneous plastic products.

Source: Reports and Analysis Section, Employment Security Agency, Georgia Department of Labor